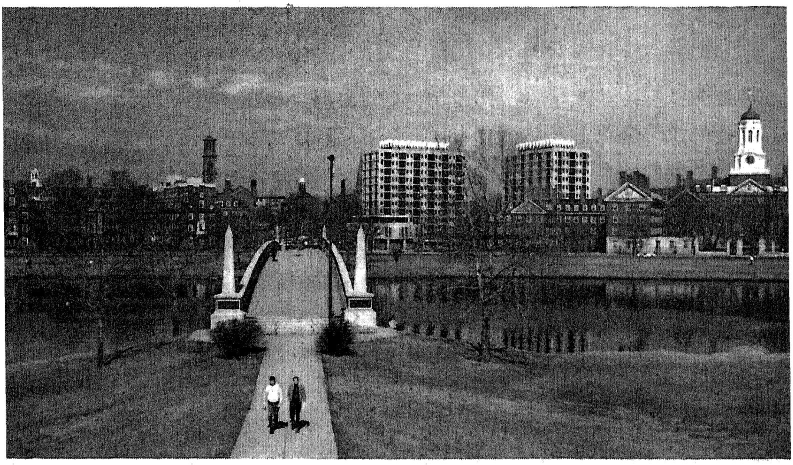
The LONG REACH

A Report on HARVARD Today



by PETER FRENCH

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With one of its graduates in the White House and key men from the university called on for top roles in the Administration, Harvard is more than ever in the news. It has become a national institution. What are its activities, its policies, its aims?

This book is a report on Harvard University as it exists today, the role that it plays in the nation's affairs and the way it is meeting the challenges of our society. The postwar era is one of rapid change and discovery dramatized by an explosion of knowledge, as well as an explosion of population. It is the world of the expert, and we look to the universities to supply the experts and the research basic to survival.

Harvard, though not our largest university, is a leader. Its make-up is vastly different from what it was as recently as 1940. Its reach is to the far corners of the world, and it supplies much of the thinking upon which national policy is based. This thinking is done in the many research "centers" established in recent years by an administration of

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PETER FRENCH

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THE LONG REACH

A REPORT ON HARVARD TODAY

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Author's Note

THIS book is a reporter's, an outsider's, look at Harvard. It is an attempt to describe, to get the feel of, a key and complex institution. It is an attempt to say what it is that makes Harvard important today. It is not a comprehensive survey of Harvard, for that would take many volumes. It is an examination of what I found to be the most interesting aspects of a very diverse institution.

The book was made possible only because some hundreds of Harvard people gave generously of their time and knowledge. Of these, I am particularly grateful to William Bentinck-Smith and William Moss Pinkerton.

I am indebted to Miss Lucie Adam, now of the staff of *Fortune,* who did much of the reporting and writing on two chapters, "The Frontiers of Matter" and "The Frontiers of Life."

PETER FRENCH

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January, 1962

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THE LONG REACH

A Report on Harvard Today

1

A WORLD OF CHANGE

THESE are the most exciting of times.

Never before has the world seen so many great changes come so rapidly on so many different fronts. Never have so many people in nations great and small been joined in a revolution of rising expectations—and perhaps never have so many people known such sweeping anxieties.

The historians of a hundred or a thousand years from now are going to look back on the middle years of the twentieth century with wonder. How did it feel, they will ask, to live in a period when a whole series of evolutions and revolutions were running concurrently, making over the lives of all the three billion people then alive?

By then the students of history will be able to resolve many of what now seem to be great paradoxes:

The world had never seemed more united—with one hundred nations joined in the United Nations and with rapid advances of technology bringing sweeping advances in living standards, education, and communication to all corners of the world. And never had the world seemed more ominously divided into two great camps—the communist and the free—each armed with nuclear weapons that could make the planet uninhabitable.

The world had never advanced its knowledge so rapidly. By one thoughtful estimate, the scholars were doubling the world's stock of knowledge each decade. But the estimates did not really convey the meaning of what was happening. That was summed up in the phrase "the explosion of knowledge." At the same time problems seemed to multiply at the same pace. The advance of knowledge was set against the "population explosion"—and all the enormous demands on existing resources that came with it.

The historians of the future will certainly take some of the turning points of these years in the middle 1900's as major turning points in history.

• • • That day in the spring of 1961, April 12, when a Russian, Yuri Gagarin, became the first man to orbit the earth in a space vehicle. After hundreds of years in which the great explorers had come from the Western world—Magellan, Columbus, Peary—the honor shifted to the East.

• • • The years after World War II when the advanced nations began a broad and consistent effort, which soon reached a scale of many billions of dollars a year, to help the underdeveloped nations. The pattern was set by General George C. Marshall, the Secretary of State, in a speech at Harvard, June 5, 1947.

• • • The dawn, July 16, 1945, when the first atomic bomb was exploded at Alamogordo, New Mexico.

At the same time the very warp and woof of society was changing in so many directions that most Americans felt like the King of Siam in Rodgers and Hammerstein's musical, *The King and I:* "It's a puzzlement."

Within the lifetime of one man the United States had shifted from a predominantly rural and agricultural country to an urban society—and then, in the postwar years, had gone suburban. The process of giving Negroes equal rights and opportunities, begun in the Civil War a hundred years before, moved ahead under a 1955 Supreme Court ruling that racial segregation in public schools must be ended with "all deliberate speed."

The pace of technological advance quickened almost beyond understanding. A host of new products—transistors, titanium, power steering and power brakes for automobiles, antibiotics, television sets, polyethylene, styrene plastics and vitamins, helicopters, synthetic rubbers and synthetic detergents, air conditioners, tape recorders, computers, air travel—made over many aspects of life. Productivity in agriculture advanced so rapidly that, even though farmers by the million left the land, surpluses piled up to $10 billion within a few years. Productivity in industry advanced so rapidly that a whole host of devices—unemployment compensation, supplementary unemployment compensation, compulsory retirement, laws calling for full train crews, subsidies for steamships and other industries—flowered as never before. No one has ever made thoughtful estimates, but it is quite possible that if all companies in all areas of the economy made full use of the known technology—going to automatic assembly devices, for example—the United States would be able to turn ten million or more workers to new purposes.

The rush of advance in science was as great, and perhaps greater. "I could spend my full time merely keeping up on the advances in my field" became a common saying among scientists. The flood of new information in even one field, such as biophysics, became so great that the only hope of translating it and making it rapidly and widely available lay in the electronic computer.

Change seemed to come slowest in the social field. It took the British people a thousand years to develop the parliament, rule by a debating club. They succeeded in transplanting it to the English-speaking nations, but their neighbors on the Continent, the French and Spanish, have never made it work. Even so, the great experiment went forward in the United Nations. Colonialism went down the drain in country after country. Dozens of new nations emerged in Africa and Asia. They seemed almost fiercely nationalistic, setting up their own governments and throwing out the European administrators who had run the country, even though, as in the Congo and Libya, they might not have more than a few dozen people with college educations who could do the job of administering the intricate apparatus. One of their first moves, in almost every case, though, was to take their place in the United Nations.

Even in the slow-changing areas change came at a pace the world had never seen before. The jet plane shrank the world, and John Foster Dulles, in his years as secretary of state, traveled hundreds of thousands of miles. Lawyers with nice, comfortable corporation practices suddenly found that they had to learn Japanese—and the whole code of Japanese commercial law. Graduate students, who ten years before would have settled down in a library to do their work, now got a foundation grant and moved themselves and their families to Indian or Indonesian villages for two years of working and living with their subject.

This is not the first time men have felt that the world travels too fast for them. Charles Dickens perhaps expressed the feeling best in the opening of *A Tale of Two Cities:*

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the age of incredulity, it was the season of Light, it was the season of darkness, it was the spring of hope, it was the winter of despair."

This was of the time when the French Revolution was becoming the Reign of Terror—and when the United States had ratified its Constitution and inaugurated George Washington as president. In the Pacific an English naval ship was on a research mission and Fletcher Christian was soon to rise in mutiny against Captain William Bligh.

It is as easy to draw the contrasts today. We may have the spring of hope in putting the first man into space. And we do have the winter of despair—Hitler's final solution for four million or more Jews was at least as great a catastrophe for thinking men as was the Reign of Terror.

But never have ideas and events come with the speed that they are coming now. It was fairly easy for the historians to put labels on periods of the past—the Bronze Age, the Golden Age of Greece, the Augustan Age in Rome, the Elizabethan Age.

Today, though, with the world moving on an accelerating curve of development, labels will not stay put. The Golden Twenties were forgotten in the Great Depression. The Great War was a convulsion that soon passed into the drawn-out Cold War. The Age of the Auto became the Age of the Airplane. The Age of Radio was eclipsed by television, when millions of families put in more time watching the green screen than they did in gainful employment. The Age of the Atom became the Age of Space. And sociologists talked of the Age of Anxiety. Historians may call it the Age of Technology, the Second Industrial Revolution, or an even grander name. Perhaps the most hopeful aspect of the world is that the nations have avoided war with atomic weapons. Wars and incidents that might have led to war—Korea, Suez, Lebanon, the Congo, even Cuba—have been limited, held short of the point where they might have provoked use of the big bombs.

Other great events may finally characterize the times. In about forty years the Soviet Union has transformed itself. It has changed from one of the most backward of great nations to become second to the United States in economic power, the rival for world political leadership, and first in the race into space. Similarly, the Communists since World War II have started China, the ancient sleeping giant among nations, on a new road which may have profound effects on the world.

Or this may be the age when the world begins to become one world. By the late 1950's American companies were investing $4 billion a year overseas, largely in setting up their own plants and facilities. This was not a reach for oil and minerals in the ground nor the purchasing of foreign securities. It was a search for growth in growing economies—probably the true internationalizing of American business. At the same time British and European countries were reaching outward. More and more nations were grouping into trading communities, like the Common Market in Europe. Barriers to trade were being ground down.

At the same time the fast-growing scientific effort around the world was hurdling all the old barriers. The race to develop the atom, to understand space, to conquer disease, to research the causes of cancer—none of these could be contained within tariff walls.

If science and commerce provided the warp, the lengthwise threads in the loom of society, the problems people held in common provided the woof. Slowly the world-wide fabric was being woven. The Great Depression demonstrated for all time that economic problems enmesh all the nations. By the sixties, the Western countries were mounting an immense effort—through the United Nations, the World Bank, Point Four, the Peace Corps, private investment, and foundation-financed research—to grapple with the problems of rising populations and age-old poverty.

In all this there had perhaps never been a time when an individual felt so small.

More and more the work of the world was done by great institutions. When John Fitzgerald Kennedy became president in 1961, the United States government was running a budget of more than $80 billion a year—and was clearly headed for the $100 billion level. In all, governments at all levels, federal, state, and local, accounted for more than one quarter of the national product. General Motors and American Telephone each did an annual business of more than $10 billion. The Ford Foundation, the largest of the rapidly growing number of private foundations, started life in the middle 1950's with resources greater than the gold and dollar reserves of the British Empire.

Justice Oliver Wendell Holmes had seen the institution as but the lengthened shadow of a man. By the middle of the century the institution had become such a dominating part of life that for many persons the central preoccupation of existence had become the maintaining of their own identities. In the 1920's George Horace Lorimer was as well known as editor of the *Saturday Evening Post* as was the magazine itself. In the same way Nicholas Murray Butler was a national figure, and it may be that more people would have recognized his name than would have known that he was president of Columbia University. In the years after World War II, however, the individuals were clearly overshadowed by the institutions. No one ever made a survey to test the matter, but almost certainly only a tiny fraction of the readers of the great national magazines—the *Post, Life, Look, Time,* and many others—would have been able to name the editors of their favorite publications or the presidents of many major universities.

Perhaps the measure of the change in the individual's relationship to his world is best epitomized in the words of Dr. Clemens E. Benda, a psychiatrist on the staff of Massachusetts General Hospital. In contrasting the difference in psychiatry in Freud's day and in today's highly organized society, he said:

"Anxiety about sex has almost disappeared from the gamut of guilt feelings. Sexual relations are about the only safe haven in this uncertain world."

The very press of the world's business—brought home by rapid development of radio, television, and printing—made an individual feel that he was struggling to avoid submergence. "How do you find time to read?" has long been a common complaint. By 1960 even the specialist in a narrow field—African affairs or microbiology—had to stretch his working day long into the evening if he wanted to feel himself well informed. The shrinking of the world through better communications shrank the individual too. With each passing day he was more and more aware that we are, each of us, responsible to all others.

The pace of change created its own countercurrents. Perhaps one of the least noticed but most far-reaching was the demand created for brains, for intellectual achievement, for experts. It was a broad effect through the advanced societies. In the United States, in the late 1950's, the Bureau of Labor Statistics reported that for the first time the number of white-collar workers passed the number of blue-collar. Factories that had had one engineer for each twenty or forty workers found that they needed an engineer for each three or four.

In areas where work was sophisticated—in building missiles, in research staffs, in design offices—the number of highly educated specialists might match that of all other employees. In the recession of 1960 the possibility of "structural unemployment" became clear—the possibility that millions of unskilled and uneducated workers might be permanently displaced from the work force.

Perhaps the best single example of this change was contained in estimates of the costs of space exploration. At the time the United States sent its first astronaut into space, Commander Alan B. Shepard, Jr., the National Aeronautics and Space Administration estimated that the cost of putting a man on the moon would be $40 billion—roughly $200 for each man, woman, and child in the country. There was no way of making a precise breakdown of that figure. But the amount of hardware involved would be relatively small. Much of the $40 billion would go for brainpower.

One other measure of the demand for brainpower—the number of students in college was expected roughly to double between 1960 and 1970.

Change. Change. Change. The panorama is limitless. It cannot be measured. The sweep of the "revolution of rising expectations" among people in the underdeveloped countries and the "explosion of knowledge" in the developed areas simply cannot be plotted.

The possibilities were seen this way by historian Arnold Toynbee:

"This swift succession of catastrophic events on a steeply mounting gradient inevitably inspires a dark doubt about our future, and this doubt threatens to undermine our faith and hope at a critical eleventh hour which calls for the utmost exertion of saving spiritual faculties. Here is a challenge which we cannot evade, and our destiny depends on our response."

Against the background of a universe of change even Toynbee's challenge becomes a matter of individual response—and the possible responses are many. For the sweep of change gave each individual more freedom, more opportunity for choice, a greater variety of challenges than ever before. Even in the bleak view of the world as a set of forces and institutions beyond the influence of any one individual, the pace of change —in the rise of new ideas and new industries, the growing number of interstices within and between large organizations, the freedom to choose one's own way of life in a large community—meant that each individual had an almost bewildering variety of choices to make.

Perhaps nowhere do these forces of change and challenge come to focus more sharply than in an American university.

And perhaps no institution, other than the federal government itself, is more involved in this world of change than is the university.

The university is in itself an engine of change—much of the new knowledge that is summed up in the phrase "the explosion of knowledge" originates in universities.

And the university is a focal point for the changes in population, in social ideas, in technology. It is worked on by change at least as much as it creates change. Since World War II, when the universities were called on to supply the people to develop radar and the atomic bomb and to plan national mobilization, the universities have undergone sweeping changes.

The universities are still changing rapidly. The universities and government are inevitably wedded—neither could do its work without the other. In 1960 the federal government, through a maze of laws and agencies and programs, was funneling several billion dollars a year into the universities.

The great foundations—Ford, Rockefeller, and many others—also are wedded to the universities. In fact, the three—government, foundations, and universities—seem to be forming a new community of scholars, a common body of experts, and an interlocking set of resources. This is something new on the American scene. The relationship is not simple—it is not merely that a professor puts up an idea, the foundation some money, and the government more money. It is a much broader joining of experts and resources to tackle problems running through the society.

In all this, Harvard University is a leader with a unique position. It is the oldest and richest of American universities, and one of the biggest, though not at all the biggest. These things are important in making Harvard what it is. They are important foundations for leadership. But they do not in themselves create leadership. This, as it must be, centers on able people and on a tradition of excellence, a determination to set the lead. These qualities, and others, all go into making Harvard the university that more than any other is looked to to set the pace, to establish the standard, to be the model.

Harvard's influence is far-reaching—but often hard to see. Harvard does set its stamp on many aspects of American life—and notably on the world of education. But its influence goes far beyond. Harvard men, consulting for government, will have some hand in shaping policy on the North Atlantic Treaty Organization. Harvard scientists, directly and indirectly, will have some part in developing oral contraceptives and methods of eliminating caries.

But in the vast panorama of the United States and the world in these years the influence of even an outstanding institution is difficult to trace. It is part of the warp and woof of the whole, and often an unseen part—because Harvard's role was the contribution of an idea or the training of a man that will not appear on the surface of the fabric.

"You can't pick up one vertical thread in this fabric and say that that is Harvard," as one official of the Ford Foundation put it. No university can be thought of any more as simply a cloistered community of scholars. Universities are complex institutions in a complex society, and institutions with a very long reach.

This book will be an attempt to explore the long reach of Harvard.

2

VIEW FROM THE SOUTH

THE approach is from the south, along the river drive from Boston.

Cambridge from the south side of the Charles. Gay and golden and green on a sunny fall day. The sweep of the river, the one unchanging bit of nature's work. The ease of lawns, the unease of cars whooshing along the parkways on both sides of the river. High spires, white and jeweled with color, on three of the old Harvard houses—Dunster, Lowell, Eliot. Thrust of the new high towers of Leverett and the bulk of Holyoke, modern as anything in Mexico City and already settling into place among the Georgian brick of the older houses. Shells and sculls on the river, water bugs in the fading light. A boathouse of Victorian grandeur, fading in time.

A man needs time to see it, time to feel it in dark and in mist, time to feel the settling peace of one of the most pleasant areas about Harvard.

Cambridge from the sidewalk in Harvard Square. All the noise of the gasoline age, walkers by the hundred. Harvard turns a Georgian back and white-trimmed windows on the Square. M.T.A. Rapid Transit. Eight Minutes to Park Street. Eight minutes to Boston and the State House, Jake Wirth's special dark beer, Durgin-Park's lobster and Indian pudding. Buses, taxis, English sports cars, Italian scooters—traffic that threatens to overwhelm the senses. This is one of the busiest intersections in America.

A place of contrasts. The high buildings, of red brick and 1890 stuffiness, relics of a sleepy day. The quiet efficient façades of the banks and the Harvard Coop. A liquor store on the busiest corner, sentry boxes for the police that might have been left over from a harbor fortification of President McKinley's day. Camera stores, everything at a discount. Sporting goods, clothing with Austrian sweaters and English shoes. Bookstores, a dozen honest bookstores that tempt any booklover. Titles in English, German, French, Greek. Prints—from Picasso to Gibson girls on the soft rivers of an old dream. A university row, with touches of Oxford High Street and Princeton's Nassau Street. The Porcellian Club, with a mirror mounted outside the window so the boys can see who is coming along the street. Rooms and rites sacred to members, so that no stranger ever sees them—in the almost forgotten fraternity tradition.

The Square spreads through a dozen winding streets, short and narrow. Mt. Auburn Street, a block to the south. The *Lampoon* building, once elegant, still flying the golden ibis. This is the area of the clubs—the A.D., Spee, Fly (which was Franklin D. Roosevelt's), the Iroquois, Phoenix, Fox. D.U., Delphic. They're for upperclassmen, eating clubs now. They're relics of the past, still hanging on. The Signet Society's house, its walls hung with memorabilia of members who made their names in the literary world—Frederick Lewis Allen, Robert Sherwood, T. S. Eliot, and many more. The house contains the rose given Eliot when he joined the Signet, preserved in its fragile color under glass. A step to the Hasty Pudding's building, with its pool tables, the only remaining poolroom in Cambridge. Its theater is hung with the covers of the programs from dozens of shows.

Towering above them all, the new university health service building, exciting in concrete with lines of louvers and screens on its façade, little outthrusting areas, small blocks of bright color. A line of trees that will join the green of the Yard to the green of the lawns of the houses two blocks away.

Take a little detour to learn about this. A hospital with fifty beds, and thirty full-time and seventy part-time doctors, including seven psychiatrists, so that one is always available if someone needs him. All the resources of a good community hospital, the program paid for by students and faculty through an insurance program. Clinics that serve twenty thousand people who make one hundred thousand visits a year. About one thousand make an average of six visits each to a psychiatrist. "We're quite sure," says Dr. Dana Farnsworth, "that the mental health of Harvard people is as good as that of other college groups—and at least as good as that of the general population. After all, these are young people working hard—and they should be in good shape." A Harvardian accent on research at the center. "We want to study successful students, find out how they cope." Not the problems of problem children, the common focus of research.

Walk a bit to the south. The houses. Harvard's superdormitories. President Abbott Lawrence Lowell's great experiment in restoring a small college atmosphere to a large school. Seven were built in the early 1930's; the eighth, Quincy, has been in service only since 1960. Its cost was roughly $12,000 per student—about what the first seven cost when construction costs were low and a figure made possible only by ingenious design. Each house has a master, a faculty man of some distinction, and tutors who live in. Each has facilities—libraries, dining rooms—that would be envied in the dormitories of most colleges. Each house has its own athletic teams—when Harvard plays Yale at Thanksgiving time, there are not one but about a dozen teams that make the trip. Each has its own character, although differences between houses are small. Each houses about 350 boys, enough to make a collegiate community in itself. This was a great experiment in college living—Edward Harkness's original gift of $12 million by no means covered the total cost of the houses. It has probably not worked out completely as President Lowell hoped it would. Matters of education, by and large, are firmly rooted in the Yard; are not really directed in the houses. The living is not as gracious as it was in Lowell's day; the houses are more crowded, the dining-room food institutional. Students find that their quarters provide more of the privacy of a New York apartment than the close community life that Lowell might have hoped for. But there is no doubt that the experiment is a success. Harvard would like to have more houses. The atmosphere, as anyone can feel walking through the quadrangles or dropping in at rooms, is gracious. Students, time after time, cite conversation in the dining rooms as one of the great experiences of Harvard.

Walk again toward Harvard Square. Red-brick sidewalks. Here and there a house that dates from colonial times. Brattle Street, stretching out north and west. At first, all the bustle of subway America. The Brattle Theater, old but loved by Cambridge. Below it a coffee shop of the Greenwich Village patent, a gallery for modern paintings, a civilized little bar. Odd amalgam of shops with modern design and high-fidelity sets and old colonial buildings. The Window Shop, an odd combination of shiny gift shop and old-inn restaurant, all on the site where Longfellow found his smith. Then spacious old houses—a street that says of itself: only in Cambridge.

The people. At first glance the students are homogenized, upper middle-class American. Many of them would be at home in Princeton or Oxford. But then you look again, a boy unmistakably from the Bronx. Alumni with the Boston look, going to the footfall game. A sari there, and the Cossack hat of a Middle Easterner. An athlete in chinos, whose ancestors were certainly Scots. Girls with fresh cheeks and what may be a deceptive innocence in their eyes. "It's just like always," says an alumnus twenty years out as he heads for the stadium, "the girls are lovely and the teams don't win." An Indian with what is probably a Radcliffe girl. Beatniks—not many. Boy in a Harris tweed coat and blue jeans—"Chances are he's just had lunch in one of the house dining halls, where ties are required," says a student. But you get the feeling that clothes are not important at Harvard. More and more students and professors are indistinguishable from the types who work in business offices.

The Yard. Walled off from the world by brick and iron. Wadsworth House, built in 1726 and shelter over the years to George Washington, Ralph Waldo Emerson, Light Horse Harry Lee, nine presidents of Harvard, the Lord knows only how many students. Now home to alumni officers and to David McCord, the poet of Harvard.

Walk out into the open and pause. This is the Old Yard, where the good folk of Cambridge once grazed cows. Massachusetts Hall, oldest and perhaps most elegant of all Harvard buildings, on one side. University, screened by trees, on the other. It was designed by Bulfinch, and carries its distinction with ease.

Here you've stepped back into the past. People walking. No cars, no scooters, no noise. Girls, young mothers pushing prams. Radcliffe girls cutting across with their bikes. But Cotton Mather walked here, you think of it.

The New Yard. Memorial Church to the north, another of those elegant spires by which Harvard architects sought grace. On the other side, the massive bulk of Widener. Far and away the largest of university libraries. "Destroy everything else that Harvard has," someone once said, "and you'd still have a university with that library." But Widener is only one in a system of ninety libraries, some of them, like the Law School, Medical School, and Business School libraries, the greatest collections in their fields. Altogether—6.5 million books. Says Paul H. Buck, who retired from provost to become librarian, "We want this to be the most open of any of the great libraries, the most accessible to a scholar." In short—any serious worker can get into the stacks and search the collections for himself.

Stay a moment on the steps. This is Harvard's crossroads. Here a Radcliffe girl pauses in her black leotard and scarlet sweater to feed a squirrel. Here, in the spring, there may be an impromptu concert. Here is where Commencement will be held. Here the university builders worked to create that atmosphere which says this is Harvard. Here the massive opulence of Memorial Church blends with the workaday brick of Sever Hall and the green bookbags of the passers-by. Here bespeak ancient wealth and open freedom, the unchanging rhythms of time and the seasons.

A few steps away, around the corner of Widener, sitting like a tugboat tied alongside an ocean liner, is a small and handsome building—Houghton Library. Across from it is Lamont, a reading library, a 100,000-volume library where male undergraduates read for their courses.

With luck, you may meet William A. Jackson, the director of Houghton. He may show you a couple of projects—a display of one hundred books, all first editions, all books produced when the authors were no more than twenty-one. Here are the first works of Goethe, Coleridge, John Buchan, James Gould Cozzens, Disraeli, Hamilton, and dozens of others, a few running back to the early 1500's. And all the books were taken from Houghton's shelves. This little building, so handsomely unassuming, houses America's largest collection of rare books and manuscripts. To it come scholars, biographers, historians from all over the world, several thousand in one month.

A little group of researchers under Jackson's direction is overhauling the standard bibliography of all works published in England before 1640, the great period of the language. To the 26,000 entries in the original they have added 14,000.

Polished mahogany, the fine leathers of bindings three hundred years old. A visitor finds his hands itching. But go below. There air-conditioned, practically dirt-free catacombs stretch out under the quadrangle itself and under Lamont. In this vast subterranean area are steel shelves that contain books, manuscripts, broadsides, letters of the great. The shelves stretch as far as the eye can see. Keats—eleven copies of the first edition of his first book, two thirds of all his handwritten material that survives. A section of shelves with all the first printings of Holmes's books, another with Howells's own books and those from his library. The 175 journals in which Emerson recorded his thoughts day by day. Luther's works. Jackson, tall and precise in manner, knows the books in hundreds of collections, carries in his mind the names and descriptions of thousands of books that Harvard needs to fill out its collections. The sheer wealth, beyond counting, overwhelms a visitor as the Spaniards were overwhelmed when they finally saw the accumulated gold of the Incas.

Widener's steps again. A youngster passes carrying a green bag, wearing corduroy jacket and trousers and open-toed leather sandals. You wonder if he suspects the wealth that is stored ten feet below the path he walks. But, then, wherever you turn about Harvard you find little worlds that fill a visitor with wonder.

Off to the north, in the jumble of graduate schools, an area bigger than the yard. The Graduate School of Public Administration in Littauer. The School of Education in crumbling Lawrence. The massive spread of Langdell, the Law School. A quadrangle of museums—Peabody, Agassiz, and Comparative Zoology—each a mecca for specialists. One display, the glass flowers, draws two hundred thousand visitors a year. The Electron Accelerator, the Harvard Herbarium, the anechoic chamber, one place where a man can find absolute silence. . . . Farther off, Radcliffe, the Astronomical Observatory. . . . Harvard has 142 acres in Cambridge, hundreds of buildings and more going up all the time. Something like $95 million in construction is under way or on designing boards. A new visual arts center by Le Corbusier, plans for others. The new ones will be ten-, fifteen-, and twenty-story buildings, for space is short. In the next ten or twenty years the university will ring Harvard Square with them. And there is much more, the Business School and a sprawling athletic plant to the south, in Boston. The great quadrangle of the Medical School a few miles farther on. Harvard Forest upstate. The Blue Hill meteorological observatory. Two centers in Dumbarton Oaks outside of Washington. Bernhard Berenson's villa in Italy.

Harvard is rich beyond dispute. In the middle of 1961, its securities alone were valued at $717 million. That figure had climbed almost $100 million in the year, partly from gifts but largely from appreciation in the market. This is the accountant's conception, a fiction in a sense, for Harvard could never sell all those securities. But they do provide income—roughly $18 million of the university's total income of $83 million. And the figure does provide a measure of the university's resources. Great as that endowment is, though, it would not sustain the university long. Current gifts are almost as important a source of income—about $14 million. And the federal government is much more important—it provided almost $22 million in contracts and grants.

Walk on a bit. Outside of the Yard. There are other wonders—the Loeb drama center, perhaps the best-equipped theater in the East, one so new that students hesitate to use it. But the old holds its lures . . . Memorial Hall, built after the Civil War as the Commons for the entire university, long since outgrown and now used for examinations. A great medieval barn of a building, with Sanders Theater, Elizabethan and inept, tucked against one end.

And below it, in a warren of rooms, the workplace of a Nobel Prize winner, the last place one would look. And the award surprised the imperturbable Harvard, for only a handful of Harvard people knew the winner. Smith Stevens, director of the Psycho-Acoustic Laboratory, tells how he and Hallowell Davis were planning a book on hearing twenty-five years ago. They discovered that many of its pages would go to reporting experiments being done in a far-off laboratory. They decided one of them should go there and look up the experimenter—a man named Georg von Békésy working in the laboratories of the Hungarian telephone system. That was 1937—and Harvard's first contact with a man who was to come to the university after World War II, who was to be known as the man who knew more about the ear than anyone else, and who was to win the Nobel Prize in 1961 for work he had done thirty years earlier.

The story says much about Harvard. It has had the winners of eight Nobel prizes. Harvard is so large that they may not have been known to more than a few close associates in the university itself. But they were drawn to the university—and from some obscure corners of the world.

The story, too, shows something of the enormous range of the Harvard faculty. Some work, like von Békésy, as lonely experimenters. Some work in teams on huge machines, computers and cyclotrons. Some inhabit nooks in the stacks of Widener, seeming hesitant to creep out. Some work like executives, scheduling their time for weeks ahead, spending a quarter of their days in travel, maintaining two or three offices, one of which may well be in Washington. These men write their books, as do many other Americans, in their own studies at home on nights and weekends. If Harvard is a homogenizer, it is hard to see how it puts a brand on these people. They do, however, share some characteristics—above all, they are articulate and they care about their work and about Harvard.

In the end, of course, Harvard is people. It is a community of about twenty thousand. Its alumni number more than one hundred twenty thousand. One way to get some impression of the range of these people is to look at one page in the *Alumni Bulletin,* which is published seventeen times a year. That page will list about thirty-five books produced by Harvard people. A sampling of titles from the October 14, 1961, issue: *How to Know the American Marine Shells,* by R. Tucker Abbott; *Essential Pathology,* by Roger D. Baker; *Leonard Bernstein,* a biography by John Briggs; *The United Nations: Constitutional Developments, Growth, and Possibilities,* by Benjamin V. Cohen; *The Beginnings of English Newspapers, 1620-1660,* by Joseph Frank; *Soviet Society,* by Alex Inkeles; *The Sea 'Venture,* by F. Van Wyck Mason; *Teddy Roosevelt, All Around Boy,* by Edd Winfield Parks; *Federal Tax Reform: The Issues and a Program,* by Dan Throop Smith; *Chairman of the Bored,* by Edward Streeter, and *The Making of the President, 1960,* by Theodore H. White.

Such a cursory view of Harvard is not enough. Its loot is simply too prodigious; its people are too varied. But such a view of Harvard does bring one sharply up against the limits of time and the human mind. Benjamin Franklin could encompass in his mind the science of his day, the range of political theory of the Founding Fathers, the life of his time.

Today even a top-flight physicist cannot read all the material in the journals on his own field. New conceptions develop so rapidly that the language in many fields changes every few years. Today, similarly, no one man can keep abreast even of the material that is added to the Houghton Library each year—it amounts to five to ten thousand books and more manuscripts than can be counted.

Harvard itself has grown beyond the comprehension of one person. Where Eliot could look about in 1869 and say, of the fields of learning, "We would have them all, and at their best," no one mind could now grasp all the ramifications of scholarship within the university.

Harvard in its growth has become national rather than Bostonian or Yankee. Even in the days of Lowell, when members of the undergraduate clubs often had valets, Harvard was dominantly a Yankee institution, with most of its students coming from New England and with strong Yankee streaks in its character. Frugality was one of those streaks. Lowell, in setting up the Society of Fellows, which was one of his great dreams, insisted that the furniture for its rooms be bought secondhand. That tone and many others have changed. The Harvard "accent," which some old Harvardians insist was really a Groton accent, has all but disappeared. In any case, very few people in the Yard now talk as did Franklin Delano Roosevelt or as does John Fitzgerald Kennedy.

In the end, Harvard's great pride is in its people. They include six presidents of the United States (the two Adamses, two Roosevelts, Rutherford B. Hayes, and Kennedy); a pride of Cabinet officers, governors, senators, and congressmen; the winners of eight Nobel prizes, a battery of Pulitzer Prize winners; and so many men who have won distinction in so many fields that only *Who's Who* can classify them.

Perhaps the most useful way to think of Harvard now is as a relatively small community with the resources and the numbers of outstanding men that would be found in a city. Indeed, the university is much like New York city in two basic characteristics:

• • • Harvard, like New York, has great resources—a bewildering richness, in the accumulations of the past, in laboratories and equipment, in the breadth of minds of its people. They are there—open to anyone who has the qualifications of learning and the courage to ask questions.

• • • Harvard, like New York, maintains great freedom for individuals to live as they will and to think as they will.

Both are loose and rambling structures, both have a minimum of pettiness, both have many interstices in which an individual finds freedom to go his way.

Harvard is not one world but many. Each person who knows Harvard has his own view of it. He makes a world for himself within it.

3

A UNIVERSITY IS

MANY if not most Harvard people refuse to try to categorize or to characterize it. They have only one word for it: Harvard is diversity.

Harvard can be traced, as blips on a radar screen outline a headland, in conventional terms. It is several hundred buildings. But the count of buildings refuses to sit still, there are too many of varied uses and too many are added each year. "You're always stumbling on some new, little building going up," as one old resident puts it.

There are nearly 5,000 "teaching officers" for a student body of about 15,000, but even seemingly simple statistics have to be qualified. The total is inflated because, for example, all the doctors on the staffs of the seven principal private teaching hospitals associated with the Harvard Medical School hold Harvard appointments. Many of these men, of course, are practicing physicians who give Harvard little time.

The teaching officers are organized into nine faculties for the College and the ten graduate schools—and even here Harvard has its own pattern. The Graduate School of Arts and Sciences and the College have a common faculty. "The faculty of the Graduate School is a myth," says Howard Mumford Jones. This reflects a spirit shared by many in Cambridge—that the College is the heart of the university and that the graduate schools, great as they are, are secondary. It reflects reality, too, in that a student in the College can take graduate courses.

The Medical School and the School of Dental Medicine also have a common faculty. Finally, to bring in one more variation, Radcliffe has no faculty; the girls attend Harvard classes. Radcliffe, though, has its own president and its own administrative group.

The most striking single observation about this community of twenty thousand scholars is that it is not what it was even ten years ago. Since 1950 Harvard has reached out, probably fully achieving a hope that goes back many years. It has become a national university in the large sense of the words.

The result: Harvard is no longer a stereotype. It does have some of the "English types" that were once thought to put a stamp on the place, but these it tends to regard as rarities that must be preserved. It does have some of the "old Boston families"—the Saltonstalls have sent ten generations to Harvard—but these, too, are dwindling in numbers. Older members of the faculty are concerned about the decreasing proportion of students from Boston, for Harvard's relationship with the great families of Boston once gave it financial and intellectual strength, notably in the days of Ralph Waldo Emerson and James Russell Lowell.

Now Harvard, in both faculty and students, is national. Its recruiters scour the suburbs of Pittsburgh and Chicago—

and the open country of Montana and Oregon. It is "American"—but that doesn't mean that a man is automatically recognized as a Harvard type. For one attribute that crops up everywhere among students is intellectual independence—a spirit that means they will be damned if they do or think, or even wear, what everyone else does or thinks or wears.

"If you see a guy in blue jeans and a seventy-five-dollar sport coat, he's probably an English major. But you can't rely on that, and that's about as far as you can go in typing students," one of them says.

But this is only one measure of change in Harvard. The university's functions have changed notably. It is meeting a demand for a much higher level of education—two thirds of Harvard undergraduates go on to graduate school, at Harvard or elsewhere. Harvard has spawned a whole group of centers, such as the Center for International Affairs, where men who have been working for years can come back to the university for study and research.

To many people the most striking change in Harvard in the past ten years is that it has become a "national resource" in the sense that it provides experts on all kinds of problems. This means several varieties of change. When John Kennedy was elected president he turned to Harvard for a score of men. He took more men from other universities—which suggests that professors generally have moved up to a new place in society. But Kennedy would have almost certainly had to turn to Harvard, no matter what his own background or where he had gone to college.

The emergence of the professor as an expert had begun long before. As W. Barton Leach, Story professor of law, puts it, "The most striking aspect of life at Harvard since World War II is the degree to which the faculty has become active in public affairs—national, state and local. This is particularly true of the law faculty, but it is true only in slightly less degree of the other faculties of the University." He adds, "I would find it difficult to think of even one member of the Law faculty who is not engaged in some type of public service."

The result: Harvard today is a much broader experience for its faculty and its students than it was even a relatively few years ago. "We live in two worlds," says another professor. "We shuttle from business to the academic—and I find it a stimulating experience."

But a third new dimension, and perhaps the greatest of all, is at work—the international. As the jet plane shrinks the world, the universities' horizons expand. As John Andrews King, Jr., secretary for International Legal Studies in the Law School, says, "As more Americans go abroad, and more businesses go international, we have to learn whole new bodies of law." This outreaching runs all through the university. Dean John C. Snyder of the Graduate School of Public Health is a consultant on trachoma working with international oil companies in the Middle East. Professor Edward S. Mason has served for years as an adviser to the government of Pakistan. Harvard under the leadership of Dean John U. Monro of the College, is training members of the Peace Corps.

Students, too, come equipped with passports. Harvard, of course, draws students from all over the world. And students use the world as a classroom. A graduate student working for his doctor's degree in sociology wanted to observe the impact of industrialization on a traditional Asian village. So, he got a Ford Foundation fellowship, packed up his wife and two children, and went to live in Dhakia Naru, a village of 950 persons in North India. In 1961 twenty students went on their own to East Africa to teach for a summer.

The internationalizing process has given rise to a whole class of anecdotes. There was the professor who asked one of his colleagues to fill in for him while he attended a conference. He offered an outline of all the points to be covered. The second professor agreed and went around, several days later, to collect the notes—only to find that his friend had taken the notes with him to a conference two thousand miles away.

Even more characteristic is the story of two professors, old friends, meeting in the Yard:

"Hi, Joe. Haven't seen you for weeks."

"I've been in India the past year."

"Oh."

"How about you? Written any good books lately?"

The internationalizing process has gone on at Harvard ever since the days of President Eliot, who appointed to the Harvard faculty men who had studied at the great German universities. Perhaps the best measure of how pervasive this is: something more than two thirds—no one knows precisely what proportion but it is at least two thirds—of the books and periodicals bought by the Harvard libraries are in foreign languages.

All this means that Harvard is much too diverse to be characterized simply.

It is too big. Harvard is a colossus. "The place has become colossal," says a faculty member with many years of service. "This has inevitably led to difficulties in communication. I really know very little about the place except for my own department."

And Harvard is almost formless. The one word for describing it is to say that it is a sprawl. It is organized so loosely that it all but defeats planners. There is no organization chart to represent it—and no one would attempt to draw one up.

It is a great collection of institutions that are quite autonomous, extremely diverse in themselves, and only loosely linked together. It is often described by insiders as a set of autonomous institutions—"Harvard is a group of schools connected only by a name and a set of steampipes," but even this is out of date now. Harvard has under its name all sorts of activities that have moved away from the steampipes.

It might be fairer to say that Harvard is a state of mind. The real links in the Harvard community are the ties of tradition. Some of these it shares with the other great universities: a striving for excellence, a fierce independence in the search for truth, a belief in the individual and his potentialities. To these Harvard adds many of its own; a complex of associations, a peculiarly high respect for intellectual ability, the imprint of great men.

This complex web is expressed, and expresses itself, in a thousand ways, many of them subtle. Harvard's independence is printed on students' minds by faculty members—and independence, to a considerable degree, is a characteristic shared by those who are drawn to Harvard. It clings to some of the buildings, and certainly to the great, vaulted hall of Memorial Hall. And it is behind the little signs required everywhere by law. At Harvard an *exit* is an *egress*. And, where the law requires it, it is an *emergency egress*.

More than anything else, though, to its faculty and its students Harvard is an individual experience. "You can get anything you want here," says person after person. In the many aspects and the uncounted interstices of its sprawling organization, in all the manifold activities of thousands of active minds, in the tremendous range of courses it offers and opportunities it opens, Harvard comes down to a multiplicity of meanings—even for one individual. That's why so many refuse to try to sum up its meaning for themselves.

Here, in the words of students and faculty members, is some indication of the range of meanings Harvard has for individuals:

• • • That anything characterizes Harvard is a monstrous suggestion. If it bears any mark it is only the diverse natures and brilliance of its students. Most undergraduates have at least one major talent, like a crab his claw. Association with such people offers an opportunity for an incredibly rich college career.

• • • The real point is the *ultra excellence* typical of the best at Harvard.

• • • I'm not at all sure that we can claim to have the best in very much, any more.

• • • It's impossible even approximately to characterize Harvard since it depends so much on the individual—you can get almost anything you want out of Harvard.

• • • The riot over diplomas epitomizes the Harvard spirit ... it shows an intuition often found at Harvard, a sense of the theatrical and effective, an intelligent and colorful demonstration.

• • • The exciting contact with past and present—having finished much research for a Darwin exhibition, the personalities so vivid that the past was now, Agassiz's antagonism toward Darwin very real and Thomas Henry Huxley's championship of Darwin so fierce ... that I was breathless when Sir Julian Huxley walked into my office.

• • • Why is Harvard the hot university?

• • • The College is Harvard.

• • • Quality of instruction unexcelled—superior; students tend to be "never-never" types, a bit unaware of the real world, "existentiate" around, proud of their doubting, selfish in their concentration on my-relationship-to-the-universe themes.

• • • Going to Harvard is only a long, continuous, exciting story and I find it hard to break it up into segmented events.

• • • I find it hard to tell anyone that I go to Harvard without sounding conceited.

• • • The essence of Harvard to me is a casual remark of Dean Bundy's to the effect that the only important thing about the place is the people in it and their intellectual standards—all else is so much junk.

• • • This is one of the last strongholds of intellectualism. It seems to be on the way out elsewhere.

• • • What characterizes Harvard is a fierce search for identity and self-awareness. Everything is symbolic and of deep personal importance.

• • • This doesn't characterize Harvard, but does characterize some of its members. Three men, one from Yale, one from Princeton and one from Harvard, were standing in a room talking. A young lady walked into the room. The Yalie said: "Don't you think someone ought to get a chair?" The Princeton man went and got a chair. The Harvard man said, "Thank you," and sat down.

• • • The most impressive thing about Harvard is its tolerance. There's no worry here about gingerbread molds.

• • • Harvard is the opportunity to get to know and to work with people who are tops in their fields.

• • • Harvard's bureaucracy resembles that of France—the left hand never knows what the right is doing.

• • • Harvard is like life. It doesn't really care; and you can make it into anything you want.

• • • Harvard is a magnificent library system, an active, varied, tremendous faculty, and an equally active, varied, tremendous student body. This, to me, is Harvard.

• • • a violent clash of opinions.

• • • Harvard is the type of character it breeds—like the professor who was once introduced as "The only man so brilliant that he doesn't need a personality."

• • • The most important joy at Harvard is that of training the mind. . . . Here we clasp the past and know it, as well as this can be done anywhere in the world.

• • • The education one gets from just talking with other people here justifies the existence of the university, even if no classes were held.

• • • This is the only college in the world where if someone bumps into you during a riot, he says, "Excuse me."

• • • Harvard's most singular characteristic is freedom, intellectual, academic, personal . . . every kind of freedom.

• • • The Protestants say: "To our Father." The Catholics say: "To the Father, Son and Holy Ghost." Harvard men say: "To whom it may concern."

• • • My own most vivid expression of that which characterizes Harvard: a self-propelled drive, a dynamism that seems to pervade most people—whether at work or play.

• • • The wheels of Harvard are huge and move extremely slowly but grind tremendously fine.

• • • Harvard is a succession of ups and downs; of times when one feels like a scholar, and of other times when one feels like a displaced animal.

• • • A person gets amazingly disgusted with it periodically, but when he thinks about it, there's no place he'd rather be.

These are views of Harvard as seen, largely, from the inside. None of them attempt to put the university in its place as an institution among institutions in the American society. In this sense, the single most interesting thing about Harvard is that it is a community, if not the community, of the elite.

Harvard students are screened by their performance in secondary schools and by examinations from among the top two or three per cent of all high school and preparatory schools. The faculty, in its turn, is screened in several more ways. Harvard cannot claim that it is the best in all departments, and such a claim would be very hard to validate in any case, but the university as a whole is widely recognized to be the head of the centipede of American universities.

As one Harvard student puts it, "Students here are very aware of national affairs and have little doubt that someday they will have a hand in shaping them." This reflects both the consciousness of Harvard people of their abilities and place and the confidence that marks many of them.

Harvard is emerging more and more as a source of experts —in a world that is only beginning to be aware of its dependence on experts.

Even so, to somone looking broadly at the American scene the most interesting thing about Harvard may be the fact that it is the home of an elite—in a society which often tends to denigrate superiority.

As one professor at the Medical School says, "Wherever you go—to get a cocktail or make a speech—you have to be prepared to be worked over. It's the knock that's often a boost, but it's a knock just the same."

It is easy to predict that Harvard, which has been changing rapidly, will continue to change rapidly under the impact of the complex of forces loose in the world.

But it is not easy to predict whether Harvard people will get more knocks, or fewer, in the years to come.

4

THE BE-ALL AND END-ALL

A UNIVERSITY has come to be, in the old Yankee phrase, something of a be-all and end-all for its society.

The world is seeing a renaissance of learning, something not unlike that of late medieval days when scholars by the thousand were drawn to the newly established universities of Paris and Oxford. This, combined with rapid increases in population and broad economic gains, is sending students in numbers never approached before to the doors of universities in the United States, England, France, Moscow—indeed, all over the world.

At the same time scholars are mounting new efforts in almost all fields to go further than the scholars of the past went. They are searching the papers of Boswell, the Adams family, and hundreds of others. They are employing new methods to find new depths of meaning in history or literature—combining the approaches of historian, economist, and sociologist.

In short, society is asking more than ever before of the universities in their function of passing on accumulated knowledge.

At the same time it is asking more of them in both advancing knowledge and applying new knowledge.

The world is seeing another period something like Elizabethan times when men are pushing out frontiers in science, opening new worlds—in space rather than in the South Seas—and advancing standards of all sorts. In these efforts, whether it is a $40 billion effort to build a national highway network or a $40 billion effort to put a man on the moon before the end of the decade, the universities are a prime resource.

The universities are counted on as the cutting edge in safeguarding health—in studying cancer, heart disease, retarded children, additives for food, pollution in the streams and in the air. They are key outposts in defense—witness Lincoln Laboratories, which is a creation of Massachusetts Institute of Technology. They are looked to to provide the concepts and techniques for the development of the underdeveloped countries—as advisers for governments on land use and taxation, as sources for teachers, as trainers of members of the Peace Corps. The universities provide little "brain trust" groups for both sides in a presidential election.

Finally, the universities have a special place in society—they are the disinterested centers from which government, business, trade unions, and other groups can draw an impartial judgment. As often as not it is to the universities that the National Institutes of Health will look for a judgment on a research program or the Secretary of Labor will turn for an arbitrator for a shipping strike. A group tackling the problems of civilization—urban renewal in the cities, better methods of crime detection, safer designs for automobiles, better treatment for drug addicts—will sooner or later touch bases at a university.

The demands are made at all levels. A reporter studying politics in Boston says, "The biggest change around here is that nowadays every politician has two or three professors in tow." Governor John A. Volpe of Massachusetts acknowledged this in his address at the 1961 Harvard Commencement. His stress was not on the need for university people to take a hand with local problems; it was to explain why all the work that had gone into local planning had not been translated into better government programs.

Indeed, a citizen pondering the problem of whether or not to build a bomb shelter must look for a dispassionate word to a scientist, and preferably one speaking from an independent position. It is, in fact, one of the university's highest functions to provide sane words when the nation is swept by feeling—as was the United States when Senator Joseph McCarthy rode to great power on a tidal flow of publicity in the early 1950's.

The specifics of this multi-sided role of the university and of its new place in the world could be shown only by running through the activities of one day in any major university.

But the most significant side of this is perhaps in the universities' relations with the federal government. This was documented in a Harvard report of October, 1961, "Harvard and the Federal Government."

The report was a summary of Harvard's experience with federal programs. It was one of twenty-three being made at institutions of higher learning, all guided by a special committee of the Carnegie Foundation. That committee was chaired by President Nathan M. Pusey of Harvard, who has long had an interest in getting "road maps" that would show the channels through which money flowed from a great variety of federal agencies and the channels by which it flowed into the university.

The report started from a couple of central facts: During the 1960-61 academic year, federal funds accounted for more than one quarter of Harvard's budget. This was a high point, but the flow of such funds has been increasing steadily ever since World War II. Other colleges and universities have similar problems—at least 80 per cent of them receive federal funds and Harvard is far from the top in the amounts of money it receives or in the share of its income coming from the U.S. government. In all, 20 per cent of total expenditures in higher education now come from federal funds.

It was the science-minded agencies that spent the money. On the report's figures for 1959-60, the total of Harvard funds coming from the government was a little more than $18 million. The agencies and amounts were: Health, Education and Welfare, $8.5 million; the Atomic Energy Commission, $4.4 million; Defense, $3.5 million; the National Science Foundation, $1.5 million, and others only $290,000. The great bulk of this money was for research—of the HEW share, for example, $6.5 million was for research and $5.5 million of that came from the various National Institutes of Health for work looking to the cure of specific diseases. AEC is putting up a total of $11.6 million for construction of the Cambridge Electron Accelerator and will carry its total budget of about $5 million a year.

The bulk of the money, similarly, was spent in the science areas of the university. The three schools in the medical area —the Medical School, Public Health, and Dental Medicine —received $7.9 million. The Faculty of Arts and Sciences (which administers the Accelerator) received $8.5 million.

The School of Education received $498,000 and the rest was scattered.

One other way of showing the impact: Federal funds supplied one quarter of the university's budget, but 57 per cent in the Medical School, 55 per cent in the School of Public Health, and 30 per cent in Arts and Sciences. In many schools —Law, Business Administration, Public Administration, Design—the federal share was nothing or at best negligible.

In addition to the Accelerator, other facilities have been built with federal money. As the report says, "the Chemistry and Biology Departments have acquired new facilities, notably the James Bryant Conant Laboratory for Chemistry, a portion of the cost of which was paid by the U.S. Public Health Service. In the Medical School the Departments of Anatomy and Pharmacology have been rehabilitated, and animal research facilities provided. Similarly the National Institutes of Health have contributed to the new University Health Center. In every instance more than matching of funds from non-public sources was required.

"By 1962 it is estimated that the Federal Government will have contributed nearly $14-million to the construction, modernization, and remodeling of research facilities which will be owned and operated by the University."

Here, in building research facilities, what is happening is simply stated: The costs are running beyond anything private builders could be expected to put up. In this area, government and the universities have almost inevitably become a team—the institutions need funds on a scale that only government can provide; the government needs the creative work that can best be done in the atmosphere of a university.

But there are many other areas in which the federal government supports work in the universities.

Dormitories. Harvard hasn't yet taken low-cost federal loans for housing and other facilities. Treasurer Paul Cabot simply doesn't believe in borrowing—an old Yankee tradition. But, with its huge building program, it may yet come to accept these loans—as many other institutions do.

Instruction. The federal government generally stresses research rather than instruction, but the Harvard faculties have had substantial educational programs sponsored by the federal agencies. The largest was in 1959-60: Something over $283,000 to the Faculty of Arts and Sciences and the School of Education. The money was provided by the Atomic Energy Commission and the National Science Foundation to promote teaching of science teachers.

Consulting. At any one time dozens of Harvard professors may have individual consulting arrangements with federal agencies or elsewhere. Harvard generally puts no limit on this work—as long as a faculty member is able to carry out his academic responsibilities. The average time, says the report, is small—seldom more than one day per month for members of the Faculty of Arts and Sciences. These arrangements, of course, benefit the university in that they bring new knowledge into instruction programs. But they have a cost: the fringe benefits and salaries of faculty members who are consulting. For 1959-60 the report estimated this at $211,310—an amount for which the university expected no repayment. In addition, in that year Harvard had twelve permanent members of the faculty on leave of absence working for the federal government and twenty-one more received travel grants.

Grants. A raft of other federal programs contribute in one way or another to the university and its people. HEW contributed $1,753,000 for Training Grants—supporting about three hundred people in advanced study in the Schools of Medicine, Dental Medicine, and Public Health. Hundreds of others came on federal fellowships in science, foreign languages, and public administration.

Few of these federal dollars come the way of undergraduates. This is in part because Harvard and the Association of American Universities object to an affidavit required of student borrowers. Harvard has fought the provision for years; Congress hasn't changed its stand. This is one of the few danger signals that Harvard found in reviewing its relations with the government.

The government's reach goes even further. A few students and faculty members participate in exchange programs with the Soviet Union. Foreign faculty members and students by the hundred come to Harvard. Several schools—Design, Business, Law—have cooperative programs with foreign universities.

In all, in 1960 Harvard had pieces of at least thirty-four categories of programs managed by two score federal agencies and coming under a dozen Congressional committees. All this had one great blessing for Harvard and other universities: because the federal programs are so highly decentralized, there has been no real threat to academic independence.

"The image of a coercive government dictating what shall and shall not be done in university laboratories and libraries simply does not fit Harvard's experience with Washington," as the report puts it.

The faculty report is put in gentle language, as faculty reports usually are. But there shines through it one central problem:

How—with the many rivers, creeks, and streams of federal and foundation money—to determine what is close to the university's interests.

Any university, but particularly Harvard, is a rather loose-jointed collection of talent. It is a centipede with a spine made up largely of sentiment. Any member of a faculty may, and typically does, develop a project and go off and get financing for it. And it is very hard for a dean to resist when one of his best professors comes in with a project that promises new knowledge, new equipment, and maybe new paint for some crummy corner of the lab. It can lead to empire building. It can lead to some pretty silly projects—and Harvard has had a few of these.

More basically, the golden flow of grants might lead to some difficulties. The Harvard report pointed to two problems and to three areas that might prove danger points.

Indirect costs. Research grants typically cover all direct costs, but not all indirect costs. In 1959-60 Harvard spent almost $12 million of federal funds on research programs, but had to find $687,500 to cover unreimbursed indirect costs. Since "free money"—income that is not committed in one way or another—is scarce even in an institution as rich as Harvard, the university had to limit itself on some research programs. Other schools would find this even more of a problem.

Matching grants—these are a problem of the same sort. Both the federal government and private donors have long used the "matching funds" formula. They put up half of the money if the university will find the other half for, say, a construction project. This preserves the university's independence, but it has its problems—particularly for facilities such as classrooms, where the matching money may be hard to find.

The Harvard report points out that, even for research facilities, the matching-funds idea may not be adequate. It cites estimates that $1 billion will be needed in the next five years to provide research facilities for graduate students who are even now in school and college. To meet this goal the institutions would have to find $100 million a year of their own—a large order.

And there is another problem. The matching-funds formula tends to channel money to the strong institutions, the ones which can pony up their half. If carried too far, it could lead to the point where the rich institutions were getting richer—and the poor were getting students.

The three danger points are matters of balance.

One is obvious. The federal grants go into the science areas. And so, for the most part, do consulting assignments. It will be a rare specialist in Greek who is called to Washington. So far, the report finds, Harvard has maintained the growth of the humanities and social sciences at a respectable rate. But the danger is clear.

The second danger point is much more subtle—how does the university maintain a balance between research and teaching? This is a complicated question. Faculties have grown on federal funds—the report points out that the Medical School and the School of Dental Medicine estimate that 60 per cent of their teaching and research staffs are available owing to federal funds. The Chemistry Department found itself with one hundred fellows who already had their doctors' degrees and had been employed specifically to work on federal programs. With them around, the department began tutorials for undergraduates for the first time in its history.

It is hard to measure teaching loads in any case. Sometimes, say for a professor working on a research project with half a dozen students, it may be downright impossible to say when research leaves off and teaching begins.

The report came out on its flat feet and said: "It would be a great mistake to assume that because large amounts of federal money are available for research, instruction is bound to be neglected. Project directors are normally Faculty members, and the results of their research contribute toward lively instruction for both graduates and undergraduates."

Of this, a *Crimson* editorial said: "The faculty would be foolish to accept *that* without a closer look."

The third danger point is a fast-growing one: the rapid build-up of people on the staff who do not and may never have tenure.

The danger is that able people may be kept around until they get so old that they have little chance of getting employment elsewhere. Then, of course, Harvard would have an obligation to them. To protect itself, the university generally says that nontenure appointments may not be extended for more than eight years.

But that is only one problem. What are the equities in having two first-class scientists working side by side, one with tenure and one without? How overcome the clear shortages of tenure people in such areas as medical? How maintain the quality of faculties generally—upon which depends the flow of funds for research and equipment?

The report's cautious answer: It may be necessary, as other universities have found, to pay tenure salaries from federal funds in some cases.

This report, of course, is chiefly on the universities' side of the problem, and particularly Harvard's. The other side is in part the government's, and largely up to the committees of Congress. But part of it is the citizen's, too.

There is a clear danger that the combination of desire for higher and higher education and the greasing of a liberal flow of scholarships, fellowships, and grants may simply carry too many youngsters into advanced scientific work.

But it is not clear how any group of wise men, or any generation of students, would be able to determine how much is too much. It is simply that the forces are pushing power-fully in this direction now and may in the end reach an extreme.

In the end, the students more than anyone else probably will turn the trends. In making their own decisions on schools and on careers they make a judgment that becomes collective. One such judgment is apparently being made now on medical education. The number of applicants for medical schools is dropping sharply enough to alarm educators and doctors. Students, apparently, are balking at the long years of training, the added years of interning, and perhaps do not like the increasing specialization among doctors.

In all of this, though, one thing is clear: the federal government and the universities are locked in a new relationship. The union is certainly going to be blessed by an increasing flow of federal money—and in the future it is almost certainly going to have a lot more public debate than it has had in its developing stages.

5

ON THE FRONTIERS OF MATTER

MEN and a machine playing with the fundamental particles of matter—fragments of atoms that are as small as a millionth of a billionth of an inch.

The machine so massive that it will take about as much electricity as does the city of Cambridge. And financed by the federal government.

This machine—the Cambridge Electron Accelerator—is perhaps the most visible evidence of the great change in universities. When the ground was broken for the Accelerator, President Pusey said, "It's a sad day when Harvard undertakes—and for the first time—a project too big to do itself." He said it with a smile, or so reports one who participated in the event in the fall of 1957.

The Accelerator is a joint project with Massachusetts Institute of Technology, the great institution that shares the north bank of the Charles with Harvard. To mark the new and strange division of labor at the ground-breaking, the officials used a two-handled shovel. Pusey held the handle marked Harvard, President Julius A. Stratton of M.I.T. held the other.

This is a new departure on a vast scale. The Accelerator requires the joint efforts of two huge institutions, federal financing, and about six years of effort to plan and build. The men who man it will be familiar with the work going on in half a dozen other great atomic research centers, some of them behind the Iron Curtain. Men with ideas and projects from many laboratories in many countries will come to Cambridge.

This is a far step from the old university, a cloistered community of scholars, a group who built their lives around chapel and library and whose ivied buildings emphasized a withdrawal from worldly things.

Yet the Electron Accelerator and the jet airport have their own paradox. A major consideration in the planning of the Cambridge Accelerator was that it be within walking distance of the Yard. "If it had to be ten miles away, it might as well have been in California." In short, the community of scholars is reality. The group exploring the basic forces and mechanisms of the atom need the stimulation of colleagues in the Harvard and M.I.T. science departments, and the gentle talk of faculty clubs, just as much as does a medievalist.

The two-handled shovel now hangs on the wall of the office of the director of the Accelerator, M. Stanley Livingston, professor of physics at M.I.T.

The Accelerator is now being used jointly by Harvard and M.I.T. to probe the fundamental particles in nature. "It is no longer atomic, or even nuclear physics, but high-energy particle physics," says Thomas L. Collins, assistant director of the

Accelerator and a representative of Harvard. The Accelerator will be studying the components of the nucleus—X-raying the atom to find out what lies underneath.

The Accelerator will be working on the frontiers of knowledge about matter. It will permit scientists to explore the powerful forces that hold protons and neutrons together in the nucleus. The scientists will be examining the new particles—"strange particles," as they are called—that are formed when atoms are "smashed" hard enough. These strange particles include antimatter, such as antiprotons, mesons, and positrons—elements that physicists suspect will explain some of the fundamental workings of nature.

Physicists have known for some time that there exists a counterpart to the ordinary negatively charged electron, the positive electron. (These can be created in pairs in the laboratory by high-energy gamma rays.) The positive electron is considered an antielectron, or antimatter. When it meets the ordinary negative electron, the two can annihilate each other, releasing mass energy in the form of gamma rays.

As they have developed more and more powerful tools, such as the University of California's Bevatron at Berkeley, scientists have been able to create antiprotons as well as antielectrons. They presume that other types of antimatter exist.

Here the Cambridge Accelerator may be very useful. It may be able to confirm the presence of other types of antimatter. It is powerful, and the more powerful the accelerator the more numerous the strange particles that can be produced. Beyond this, many of the new particles being found do not fit the pattern of theory as it is today. The new Accelerator may lead to new theory. By putting together fragments of new knowledge the scientists may be able to forward their search for cosmological symmetry.

"Some of the questions we'd like to answer," says Collins, "are: What holds these particles together? How do these particles change character? What is the nature of strange particles such as antiprotons, mesons and positrons? What is antimatter? Why are electrons, protons, and neutrons fundamentally stable? Why is it that others die? How do they combine and interact?"

Many other reasons can be given for a nation's building a $12 million accelerator: national defense, prestige, advancement of research. But the real reason, as Collins puts it, is "100 per cent pure curiosity about the fundamentals of nature. It is completely and utterly basic research. I can't think of a practical or beneficial result coming out of it." With a moment's thought, he adds:

"Of course, we'll probably find things entirely different from what we expect."

What does an accelerator really do?

The Cambridge Accelerator was designed to produce the fastest particles in the world. (The title will not last: a slightly more powerful electron accelerator is being planned for Hamburg, Germany, and the Russians are known to be working on a very powerful one in Armenia.)

The Accelerator will use six billion electron volts to raise particles almost to the speed of light (that is, to 99.999999 per cent of the speed of light). It will then smash them against the heavier protons and neutrons in the nucleus of an atom.

An electron volt, incidentally, refers to the amount of energy imparted to an electron in its course through the machine. A billion electron volts is usually called a Bev.

The Cambridge Accelerator will give energy to particles traveling through it by giving them a series of electrical "kicks." Each "kick' is only about a thousand volts. But the machine gives each particle a series of kicks to accumulate a total energy of six billion electron volts. The power bill for this will run to about $500,000 a year.

The Cambridge machine will be the world's fastest (until the Germans get going) because it is designed to work upon electrons rather than protons. Accelerators at Brookhaven National Laboratory and at CERN (Conseil Européan pour la Recherche Nucléaire, a European cooperative organization at Geneva) operate at as high or higher energy levels, but they are proton accelerators. Since protons are heavier than electrons—and so harder to move—these machines do not reach the velocities expected at Cambridge.

So, the machine accelerates electrons to the speed of light while, in accordance with Einstein's law for the equivalence of mass and energy, their mass increases by 12,000 times.

Then it uses them as weapons to "bombard" the compound particles under examination. The electrons and the super-energy X rays that they produce at extreme speeds break apart the protons and neutrons. For the briefest of moments, the scientists have a look at the building blocks of atomic nuclei.

The mechanics of all this is impressive. The accelerator itself is built below ground in a circular tunnel. The building covering it is sheathed in concrete and has five feet of earth fill over its top as a shielding against radiation.

Forty-eight huge magnets, each eleven feet long, surround the 236-foot ring. These magnets control the path of the beam of electrons. The electrons themselves hurtle around the ring in a vacuum chamber only five inches wide and one and one-half inches high.

To start a test, scientists preaccelerate the electrons in a small linear accelerator. They then bend them into the orbit of the big synchrotron. Once inside the ring of the accelerator, they circulate 11,000 times—until they have an energy corresponding to six billion electron volts and a speed of 1,400 miles a second.

Just outside the ring of magnets is the "target area" and experimental hall, which looks like a big gym. Here is where the finale is produced—when the stream of electrons is released from the ring of magnetic force and directed against a special target. Here the physicists measure the strange particles and rare radiations generated by the smashing of the electrons against the targets.

To help them they have Wilson cloud chambers, Geiger counters, a liquid hydrogen bubble chamber. Electronic circuits carry the signals representing nuclear events to the "counting" room, where the scientists observe their results.

This is a huge room—100 feet wide, 300 feet long, 40 feet high. And part of the equipment is an overhead crane that can lift forty tons. It is needed to move the pieces of concrete that shield the scientists from radiation. All this is for handling particles only a fraction of a billionth of an inch in size, but moving at almost the ultimate speed.

All this, too, took years to build—and to fit into the university. One design consideration was walking distance.

"Even a little separation is big if it's not within walking distance," says Collins. "We wanted the Accelerator to be an integral part of the physics research facilities used routinely by the M.I.T. and Harvard faculties and students." So it was put on Harvard grounds and within a bike ride of M.I.T.

And there were organization considerations. The Accelerator has a staff of fifteen physicists and six engineers plus supporting technicians and office personnel that bring the total up to 155. Its operating budget is expected to reach $5 million a year. All the funds, construction and operating, are provided by the Atomic Energy Commission.

All of this might overwhelm a small institution with a relatively small physics department. But Harvard and M.I.T. agreed that Harvard would administer the contract with the Atomic Energy Commission while M.I.T. named the director. All policy questions come to a joint Executive Committee of the CEA, which includes five representatives of each of the two institutions. The director must be a permanent faculty member, as Livingston is of M.I.T., but the rest of the staff is subject to change. Foreign physicists come and go as visiting staff members. Graduate and postgraduate students of the two schools do much of the work of operating the Accelerator from day to day.

Even priorities for use pose a problem that takes a lot of thought. Because the Accelerator was almost six years in building, the number of experiments waiting for its opening was huge. Even so, a few outside institutions will get a chance to use the Accelerator—largely to the extent that they helped with the design.

And there was a question of how such a roundhouse can be fitted in with other buildings. But the newcomer's new and different shape does not set it apart in the conglomeration of buildings at Harvard. Like the others, most of which were experiments in their time, it has "settled" into place. On one side is the Museum of Comparative Zoology, which is in the tradition of New England factory buildings of the second half of the nineteenth century. Behind it is the School of Theology, which might be considered American Gothic.

But what brought Harvard and M.I.T. the Accelerator more than anything else (Princeton and the University of Pennsylvania have a similar AEC project) was the extraordinary quality of the physicists associated with the two universities.

Perhaps the whole project is best summed up by Collins, who likens Harvard to a huge, three-dimensional living organism that can incorporate elements as diverse as the Electron Accelerator and the Museum of Comparative Zoology's collection of prehistoric fossils.

"The presence of the Accelerator will not change the direction of the university," he says. "The most it can do is to act as an irritant, so that by the process of homeostasis, things are imperceptibly changed. It's not so much a question of how something new fits in but whether or not it is accepted, or rejected, by the organism."

Quite clearly the Accelerator is being accepted. The grain of sand has found its oyster. No one yet knows what the pearl will be.

6

ON THE FRONTIERS OF LIFE

EXPLORING the atom brought a burst of new knowledge—and nuclear weapons, atomic power, new elements, isotopes. It changed, and will continue to change, the life of every living person.

Exploring the cell, unlocking knowledge of the fundamental units of living matter, may bring changes just as sweeping.

Several groups of researchers at the Harvard Medical School are pushing back the frontiers of knowledge, seeking answers to the complex question of what is life. They are working now from curiosity. But they have made some basic discoveries. They have some idea of the size of the fields they have opened up; the electron microscope probably means twenty-five years of work for scientists studying the cell. And they have some glimpses of the possibilities that may come from it—new techniques for population control, for example.

The Harvard Medical School is in itself an enormously complex, ramified institution. It is located in Boston, across the Charles from Cambridge—which is significant to its work as a metropolitan medical center and to its relationship with the university. The Medical School and its affiliates, the School of Public Health and the School of Dental Medicine, stand apart from the university in many ways.

The school occupies a group of white marble buildings set on the Longwood Quadrangle, one of the most imposing architectural groups in the metropolitan area. It is surrounded by four of seven hospitals with which it is associated: Boston Lying-In, Beth Israel, Children's Hospital, and Peter Bent Brigham. Not far off are the Free Hospital for Women, Massachusetts General, and Massachusetts Eye and Ear. The seven private teaching hospitals and the school comprise the Harvard Medical Center.

The Medical School has moved with its times. It is the third oldest medical school in the country, having been founded by John Warren in 1782. Since then it has occupied seven different sites. The first was in the basement of Harvard Hall in the Yard; the second in Holden Chapel; the rest have been in Boston to be nearer the hospitals.

Even the massive buildings on the Quadrangle, only a little more than fifty years old, have been rebuilt so much that only the shells of the original structures remain.

To an outsider the Medical Center looks not only imposing but formidable. It is an intricate series of relationships among hospitals and schools for joint appointments, joint teaching responsibilities, and joint research. In both teaching and research it is outstanding among a host of medical institutions and laboratories. It is a center for research supported by a network of private foundations and agencies of the federal government.

At the heart of this complex institution is one man—George Packer Berry, dean of the Medical School. He moves among the many areas of the school's interests with the easy grace and humor of an old professional. His greatest pride is the fact that one out of every four men teaching in the nation's 87 medical schools got all or part of his training at the Harvard Medical Center. To maintain this leadership and to renew facilities for 482 students and for research activities, Dean Berry began a drive in 1960 to raise $58 million.

To see how the researchers are exploring the fundamental bits of living matter, let us look at the work of two of many research groups in the Medical School.

One group is led by Don Wayne Fawcett, Hersey professor of anatomy. Don Fawcett would not look out of place as a corporation vice-president. His offices might well have been moved up to Boston from Madison Avenue. But his specialty goes back to the beginning of medicine and his chair to the beginning of the Medical School. When a group of young Revolutionary War battle surgeons took the steps that led to Harvard's forming a medical school, John Warren was made professor of anatomy and surgery and his salary was paid in part from the legacy of Ezekiel Hersey, a physician of Hingham and a graduate of Harvard in 1728.

Anatomy, the oldest of the basic medical sciences, has changed vastly since it was taught to doctors very much as it was taught to artists—by observation with the unaided eye of the structure of living things.

In 1847, when Oliver Wendell Holmes (the Holmes of "Old Ironsides" fame: "Ay, tear her tattered ensign down!") was made professor of anatomy and physiology at Harvard Medical School, he established the Microscope Room. With a built-in oil lamp as the light source, he devised the first classroom microscope in America. One of its features was a handle so that it could be passed from student to student.

Today each student has a compound microscope. But the scientists long ago reached the limits of what they might do with light microscopes, which can produce magnifications of only a few hundred times.

Today the Department of Anatomy has four electron microscopes which use subatomic particles rather than "light" and can produce magnifications up to 500,000 times. They have extended man's vision from gross anatomy, such as dissection of a cadaver, to examination of the macro (or large) molecules within cells. "This," as Don Fawcett puts it, "has opened up twenty-five years of work for us."

It took time for medical researchers to learn to use the electron microscope. By 1870 they had reached the theoretical limits of the compound light microscope. It was simply not possible to go much further with it because of the rigid imitations set by the length of light waves. In the 1940's the electron microscope began to rejuvenate the whole field of study of the structure of things. But before it could be used n medical studies whole new techniques had to be developed. So it was only in the 1950's that its uses were really developed for the study of living matter.

Instead of using convex pieces of glass for its lenses, the electron microscope uses magnetic fields to focus a beam of electrons. Since the electrons have wave lengths much shorter han those of light, it can distinguish much smaller objects. As Fawcett says:

"There used to be an enormous gap between the biochemist and the biologist. The biochemist worked with indirect methods and the biologist only with what he could see. The electron microscope narrowed that gap. Now we can actually see molecules which formerly had been considered the realm of chemistry and physics."

The seeing is not direct. The electron microscope has at its top a tungsten filament which gives off the beam of electrons. It is directed down a column in which a high vacuum is maintained, since the beam can be easily scattered by any form of matter. Along the way, magnetic fields focus the beam and the degree of magnification is controlled by varying the strength of the magnetic fields.

It is the scattering, the fact that the electrons change direction when they pass near an atom, that makes "seeing" possible. The scattering is translated into an image by making the electrons fall on a phosphor-coated plate or screen at the bottom of the column. As the electrons fall, they are energized and produce a luminescence that makes a visual representation.

The image is sharp enough so that it may be photographed and enlarged another ten times for a total magnification from 10,000 times to 500,000 times the size of the original.

One result is a series of poster-size micrographs hanging on the walls of the Anatomy Department. The cross sections of cells sometimes look like delicate, exquisitely shadowed Oriental paintings and sometimes like strange futuristic designs. Instead of an artist's signature, however, the passer-by will find an identification: "a system of tubules, the sarcoplasmic reticulum, seen between the myofibrils."

To get those photographs some fine work had to be done in developing techniques. One problem was that the specimens had to be dehydrated, since the electron beam can exist only in a high vacuum. Since water is universally present in living things, dehydration meant that cells could be seen in the electron microscope only in collapsed form. Still, the biologists found ways of compensating for this drawback. They developed ways of infiltrating the tissues with various substances to replace the water and so keep some of the original form. And by combining the techniques of electron and phase microscopy (the latter reveals more in the way of dimension and density) they could, in effect, reconstruct the cell as it was in the three-dimensional organic system.

Another obstacle presented by the electron microscope is low penetrating power so that specimens must be exceedingly thin. This meant the development of an entire new technology—thin sectioning. Today the biologists use machines called microtomes with blades of fractured glass or polished diamonds that can cut sections down to a thickness of a few millionths of an inch. Again, though, the sections are so thin that very little of the cellular contents remains in them. So the biologists must try to re-establish the contacts and relationships among small sections of cells.

What will come of this? Why is it that medical men sometimes jump with excitement when they hear of the work being done in exploring the cell?

Don Fawcett's own story is one good illustration of this interest. Fawcett became a surgeon in part because he found he had unusual skill with his hands. He was a battalion surgeon in World War II, a post which left him plenty of time to think about the course of his career. He decided on research and went back to a $2,900 fellowship at Harvard when he was twenty-nine years old and married.

Today his reputation and that of the department are such that foundations will supply the $35,000 electron microscopes for his research. As head of the department, he lives on a crowded schedule. He teaches, both giving lectures and directing graduate students individually. He gives guest lectures, edits material for several medical journals, reviews grant applications for the Public Health Service, prepares the anatomy section of the examinations of the National Board of Medical Examiners, and administers the department—a chore which is becoming so heavy that he wishes he had a chief of staff to take over the load.

His own research is done largely at his home in suburban Waban. There, when he can find a quiet hour, he uses a microtome to prepare specimens for study under an electron microscope in the laboratory.

In his own work, and generally in the department, Fawcett and his group follow their own curiosity, whether or not the work has obvious applications. "However," says Fawcett, "since we're studying cells and how they work, the knowledge accumulated can't be too far from man."

The biologists can also examine any kind of living matter, since they are not bound to clinical research concepts, where the responsibility is to use known methods on patients.

As Fawcett puts it, "Man is the worst of mongrels. There are therefore certain places in nature to find better specimens to work with than man." Mice, for example, are bred selectively generation after generation so that they will have identical characteristics. Despite the great variety of nature and the multiple approaches of biologists, they are finding some surprising things in common about the structure and function of living cells.

"Who would have suspected," says Fawcett, "that the cilia and other components of paramecium [a one-celled animal] in a stagnant pond of water would be similar to parts of an animal or to a human cell? You know, that not many experts can tell apart the liver cell of a rat and that of a man."

One of Fawcett's continuing interests has been spermatogenesis—the formation of the male reproductive cell. He is fascinated by the changes in these highly specialized cells which contain in themselves all the genetic information of the human race and also have the power to swim.

Micrographs provide sharp images of many of the steps in the development of the spermatozoa. In an article Fawcett wrote for the *Harvard Medical Alumni Bulletin,* he commented: "The slender tails, less than one micron in diameter, that are responsible for the swimming movements of the spermatozoa are barely visible with the light microscope, but can be magnified to the diameter of a garden hose in the electron microscope and are then found to have an elaborate internal structure consisting of eighteen longitudinal fibers arranged in two concentric rows around a central pair."

With micrographs of the cross sections of the tails of salamander spermatozoa before him, Fawcett points out how the radial structure relates to function, and how this fundamental pattern is repeated time and again in living organisms. "There is a strange kind of uniformity here that extends throughout the animal kingdom—it's a biochemical and mechanical pattern."

A scientist can be detached, a layman presses his curiosity as to where this may lead. "Ultimately our studies may have practical application to population control or male sterility," says Fawcett, "for we may find what are the vulnerable points in the development of spermatozoa."

In the department, research fellows and postdoctoral students are pursuing a number of different programs. They work largely in the area of cell biology, but in fields as diverse as comparative anatomy, developmental biology, environmental physiology, endocrinology, neuroanatomy, reproductive physiology, and radiobiology. Fawcett gives the young people their own lead, but works with each of them on some piece of research while they are at Harvard. "That way, we learn from each other."

Some glimpses of the future are coming out of this work. In the past few years the electron microscope has made possible the examination of myofibrils, overlapping sets of filaments of macromolecular size. This suggests an entirely new theory of muscle contraction.

Micrographs have also shown systems of intracellular tubules which are believed to conduct impulses from nerve to muscle. To find out how nerves and muscles can produce movements of great rapidity, the department is comparing fast-acting muscles to slow ones. In this it is studying certain muscles of the bat which, scientists know, must act with great rapidity to control the short pulses of supersonic sound that bats give off in their "radar" system of locating themselves.

Other projects include studying the structure of cells lining the stomach. These secrete hydrochloric acid for digestion of proteins—but why doesn't the acid burn holes in the stomach itself? And the projects range to hibernation—by which some animals, such as the ground squirrel, can lower their body temperatures to near-freezing levels and slow their hearts from 250 beats a minute to five. This, of course, may throw new light on the use of hypothermia, a method of lowering body temperatures to slow down circulation during heart surgery.

This is one approach to the uncovering of the age-old mystery of life—but there are others.

In sharp contrast to the well-established Anatomy Department, a much newer addition to the Harvard Medical School struggles with its own approach to life and to disease. This is the seven-year-old Biophysics Research Laboratory, which is affiliated with and housed in one of the associated teaching hospitals, the Peter Bent Brigham. Here a team of researchers combine physics, chemistry, mathematics, and medicine in an effort to understand the basis of biological specificity—again, an old mystery.

"Specificity," says Dr. Bert L. Vallee, director of the laboratory, "is the one factor that separates living from dead matter."

It is the phenomenon characterizing living systems by which biological elements cause only one—a very particular and selective, or specific—reaction. Each enzyme has a special catalytic property which allows it to perform its task of chemically breaking down a particular kind of foodstuff into energy. Similarly, antibodies, antigens, hormones, and vitamins function in highly exclusive and definite ways.

"We believe that specificity must have a chemical and physical basis," says Vallee. "The alternative would mean 'vitalism'—something that doesn't exist."

The laboratory has two unusual characteristics. First, it uses both basic laboratory investigation and clinical experience, actual work with patients, so that it straddles two disciplines: clinical medicine and biochemistry. Bits of knowledge gained on one side are investigated on the other, and vice versa.

Second, the laboratory has developed new measuring tools, particularly for its work on metalloenzymes. It has had to develop instruments sensitive enough to detect elements where no more than thousandths or millionths of a gram were present in a concentration.

"I studied spectroscopy for six years at M.I.T. in order to find a method to measure metals in small concentrations," says Vallee, "and everybody thought I was crazy." It was advances in the technique of emission spectroscopy that made the laboratory's work possible.

Behind this narrow concentration, though, is some very broad reasoning. Dr. Vallee speaks with the intense, eager interest that reveals how he was able to concentrate on spectroscopy for six years when it seemed to others a bootless effort. But the ideas he outlines sometimes leave other scientists and physicians in a fever of excitement.

He believes that the old approach to medicine cannot hold for long. The "new" biology of the past fifteen years has not really been integrated into it. "New information is piled on top of the old system so that people find themselves discomfited by it. They come to bemoan the fact that we learn so much.

"And yet, tremendous change will continue.

"When I began full-time research," says Vallee, "the National Health Foundation was granting only $100,000 a year to research; now the figure is up to $700 million. This is apart from all the work being done by industry and other institutions. We can't expect the old framework to hold."

What will come?

Vallee feels that a new approach will come. Medicine is still operating as a phenomenology—dealing with things as they appear. It is often a hit-and-miss approach because it consists of narrowing down the possibilities.

This, of course, was a necessary beginning. Now, though, it is possible to try to describe biology in fundamental terms according to composition, function, and structure.

"The proposition I dare to advance," says Vallee, "is that looking at the underlying factors may lead to the disease, instead of looking at the disease first and then digging for what lies underneath. The phenomenological approach is very much like looking at the mushroom-shaped cloud of an atom bomb and, from it, trying to deduce the Einstein equation . . . the probability of succeeding is very slight indeed."

What Vallee means by this has been shown in the laboratory's work.

The laboratory's goal, as is Don Fawcett's, is to study and understand the fundamental composition and structure of living matter. Instead of the microscope, it uses physical chemistry as its primary method—and it will turn to any discipline or method of study that may help with the problem at hand.

The laboratory has concentrated on metalloenzymes because these have some hand both in formation of proteins in the body and in transmitting genetic information. It has put its effort into isolating, purifying, and characterizing these bits of metal in matter.

In doing this the laboratory found a new disease—magnesium deficiency tetany—and developed a new therapy in the course of its work. The disease had been observed in animals, but until the lab found a way of measuring the amounts of magnesium in man doctors could not distinguish between the new disease and the usual (hypocalcemic) tetany.

A second finding of new knowledge about disease came from the Biophysics Lab's work with zinc enzymes in the liver. Researchers observed that the zinc content in post-alcoholic cirrhosis was a good index of the liver's functioning, and found that some patients were helped if zinc was added to their diet. The zinc metalloenzyme also provided significant help in diagnosing a heart attack—and, in fact, it can provide a measure of whether or not a heart attack will be fatal.

The chief tool in all this work is emission spectroscopy and for it the laboratory developed a new flame source, the first significant advance in this field for half a century. The new flame, which combines cyanogen and oxygen, makes possible detection of minute amounts of metal that in the past escaped notice. The lab also developed a new ultrasensitive spectroscopic device which makes detecting trace elements routine. It can simultaneously detect and measure calcium, aluminum, potassium, sodium, strontium, barium, zinc, chromium, manganese, nickel, cobalt, copper, and magnesium.

This sounds like a renaissance of alchemy. But, of all the elements in the periodic table, more than two thirds have been discovered in bacteria, fungi, the higher plants, and animals. Most of these are today considered essential to life. Then, too—and most important of all to that complex animal, man—there is evidence in cancer, psychoses, and blood diseases that these elements become distributed in abnormal proportions.

The piece of detective work of which the Biophysics Lab is most proud is its locating of the active site of the carboxypeptidase molecule, a metalloenzyme which plays a key role in digestion. The odds against pinpointing the active site were on the order of 11,000 to 1, for it involves only three of 34,000 atoms in the molecule. Eight years of work went into establishing that the molecule contained exactly one atom of zinc, determining that it was necessary, and finally locating it.

All this work throws light on the phenomenon of specificity. How cells control specificity, and how it is passed from mother to child, is a key question for the lab. The genes, material particles in the chromosomes in the cell's nucleus, are the determiners of heredity. They are thought to have a code on their complex surfaces which contains all the genetic information—color of eyes, general structure of the body, even the shape of a smile. The chromosomes, in turn, are largely made up of proteins and nucleic acids in the form of desoxyribonucleic acid and ribonucleic acid—commonly called DNA and RNA.

These interest the lab because they have trace metals, and these trace metals have a purpose closely related to the determination of heredity.

In every direction, the lab's work is concerned with some of the fundamental biological functions, and some of the most puzzling.

Vallee sums it up: "Disease consists of deviations in normal living matter. Therapy is the restoration of factors of normality. When we can understand the composition, function and structure of things, we should have a reasonable chance of achieving therapy."

These are only two of many laboratories at Harvard. They are but two of many that are pushing back the frontiers of knowledge in a drive that on a national scale is so vast and is opening new knowledge so rapidly that in itself it is an "explosion of knowledge." With it, of course, come problems that are difficult and complex for both universities and society.

Research involves numbers of highly trained people and batteries of expensive equipment—a costly and far-reaching effort that is beyond the ability of the universities to finance. Even Harvard, the richest of the universities, can carry only a small part of the work.

Indeed, the university is in something of the position of a man on a bicycle. It can keep going only as long as it maintains its momentum.

Harvard started with good facilities and people. But its research effort runs largely on the momentum of having good people who can maintain high standards—and attract more good people.

The equipment in the old and well-established Anatomy Department was bought on research grants—which come only on the reputation that Fawcett and his people have built. Indeed, of the people only Fawcett and two others have tenure—permanent positions on the faculty. This is, in part, because Harvard is conservative. It will use only its own funds, "hard money," to finance a chair. It will not put its professors in the position of depending on research grants or other soft money.

So reputation is as important as or more important than endowed money. Harvard has good facilities because it can attract top people who can obtain funds because of their reputations—and in turn attract other people.

The Biophysics Lab, newcomer at Harvard, is an even better example. Even Dr. Vallee receives his salary from an outside grant. "I have a Harvard title," he points out, "but I'm not eligible for the Harvard health plan because I'm not on the university's payroll."

The irregularities in these setups sometimes mean that Harvard loses good men—as do other laboratories in similar circumstances—because it is not able to offer able young men more definite positions. And all this, of course, is behind Dean Berry's drive to raise $58 million, much of which would go to increasing salaries and establishing more tenure posts.

Like Dr. Collins at the Cambridge Accelerator, Vallee sees his laboratory's relationship to Harvard as very much that of a "foreign body which is not rejected but suffered by it." Like the Accelerator, the Biophysics Lab maintains close relationships with Massachusetts Institute of Technology.

It is part of an evolving relationship between the universities, foundations, and government. It is improvised, sometimes jerry-built.

At Harvard it means that many come as instructors and postdoctoral scholars, but few are chosen for tenure. It means that there can be considerable arbitrariness in such a large "living organism" as to what survives and what does not survive. In such a complex world no one can fully know what was lost or what went down the drain when a judgment is made on a man or a project.

Still, Harvard succeeds well enough in this so that it does attract good men. They come with the knowledge that they will be surrounded by outstanding colleagues. "There's a certain loneliness about a good man in other places," says Dr. Fawcett. And Vallee, after he has let his mind range over the problem, sums it up by saying:

"Perhaps Harvard is something just too good to be missed."

So the bicycle goes on.

7

THE FACULTY

IT IS easy to overlook the fact that the prime business of a university is to draw together and support a group of unusually gifted people—the faculty.

The faculty's original function was to teach—to pass on accumulated knowledge—and this held full sway for centuries. Then, long after Harvard was founded, the concept of advancing knowledge, of research, came in. This is partly a corollary of teaching: "It's a damn poor teacher who gives the same course two years in a row." And it was partly the curiosity of active minds. Francis Bacon, in *The Advancement of Learning,* observed: "For as water will not ascend higher than the level of the first springhead from whence it descendeth, so knowledge derived from Aristotle, and exempted from liberty of examination, will not rise again higher than the knowledge of Aristotle."

It was a long time before this was translated into anything that might be described as organized research in the universities. It was the middle of the eighteenth century before John Winthrop, whom Samuel Eliot Morison credits with being Harvard's "first important scientist or productive scholar" appeared on the scene. Winthrop was a friend of Benjamin Franklin, had a range of interests comparable to that of Franklin, and had the time and means to carry his researches deeper than could Franklin.

Today research is the major interest of the Harvard faculty. What research is, of course, is hard to say. It may involve some hours in Widener in preparing a lecture, it may involve days in Washington digging into Air Force procurement policies, it may involve reading court records for a study of juvenile delinquency, it may involve study of living cells under an electron microscope.

Twenty-five years ago a professor, whose salary was $12,000, was thankful indeed to tap a private fund for money enough to hire a secretary to help him with his research. Today the flow of funds for "research" is so complex that it would take a directory to catalogue it. In the same way, it would take a major research project to determine precisely how Harvard professors allocate their time. But the simplest of informal polls suggests that research takes at least twice the time that teaching does—and perhaps much more. "The place is full of people who don't teach two hours a week," as one member of the Corporation puts it.

It is research that has brought the enormous change in the universities in the past thirty years—as it has, indeed, in the world.

At one end of the scale it has developed its own cults—the administrators who have lost sight of scholarship and think in terms of grants, square feet of laboratories, Defense Department contracts, and security for classified work. There are platoons of graduate students who focus on bibliographies of medieval literature. There are, particularly in the social sciences, small armies counting noses and building private vocabularies to establish the obvious—such as that little boys like to play with other little boys.

At the other end of the scale—and even to use the word "scale" is to suggest a precision in evaluating research that does not exist—there is the research that has changed the university's place in society.

And all this has changed the image of the professor. He is no longer the tweedy, detached character who maintained an English accent and a fine stock of anecdotes about Oxford, A. Lawrence Lowell, and Woodrow Wilson. Instead, he is likely to look like the man a thoughtful businessman would like to have as a vice-president and he is likely to be one of the best customers the airlines have.

It is research, too, that has made the professor a sought-after consultant—and brought him out of the cloistered community of scholars. To keep its people—and some of them have been offered salaries in industry of as much as $150,000 a year—Harvard and other universities allow them to act as consultants.

But the burgeoning demand for the scholar's time is perhaps the best indication of the new role of the university, its place on the frontiers of society. As President Pusey says, "There is no way to measure it, but the demands made on these people are enormous."

Who are these people—these men and women whose collective name is Harvard?

The diversity of Harvard is matched, and more than matched, by the diversity of its faculty. When the Commencement procession sweeps through the Old Yard, the pageant includes men from a tremendous variety of universities, nationalities, areas of knowledge, faiths, and experience. It is a diversity beyond measure and one that would be hard to match anywhere else in the world.

But the Commencement procession includes only part of the faculty. Harvard's Directory of Officers includes men with a dozen degrees, earned and honorary, and some with none. It includes men who have made Harvard their life, as did their fathers before them. It includes others—a General Electric lighting engineer, for example—who may give the university only a few hours a year.

These people work in an incredible variety of places: over mahogany desks in the austere elegance of Massachusetts Hall, among clutters of fossil bones in the Museum of Comparative Zoology, in offices that would do credit to a Hollywood designer, in diggings deep in the mud of Texas, in the hushed atmosphere of the National Security Council in Washington, in Nigerian schools, on research ships in the South Atlantic, in an Italian villa, and in basement offices so filled with paper and books that a visitor has to squeeze his way in. There will be nothing in sight in many of these offices, and nothing about the man, that will say Harvard.

The variety and scope of work and interests is probably literally beyond computing. The listing of courses given by the Faculty of Arts and Sciences alone takes more than 300 pages in the Official Register. The books produced by Harvard people would easily fill a good-sized library on their own. Some, of course, are widely known as writers—Paul Tillich, Arthur Schlesinger, Jr., J. K. Galbraith, James Bryant Conant. But there are so many of them that a librarian jokes that the

Harvard libraries can not stop buying books as long as Harvard professors keep on writing them.

To give meaning to all this, let us look at a few of the activities of Harvard people. These are not the great names—it is increasingly difficult to say who are the great names in the university; at least, it seems easier to name the greats of history. These are people chosen at random in an informal survey who volunteered something of what they were doing in the spring of 1961.

W. Barton Leach, Story professor of law, was getting to work at 5:30 in the morning, and putting in two and one half hours before breakfast as well as weekends to finish a casebook. He taught two hours on Mondays, Wednesdays, and Fridays and gave a two-hour seminar on Wednesdays. He was putting in five days per month in Washington as a consultant to the Chief of Staff of the Air Force. His law practice took varying amounts of time—an average of perhaps 10 per cent.

The most interesting aspect of Professor Leach's legal work has been sponsoring legislation in a dozen states to reform the Rule Against Perpetuities, one of the many specialties in law. This has involved appearing before legislatures, drafting legislation, and writing articles.

On the education front, he was working with other professors from the Law School and the School of Education on a survey of methods in legal education, a project he had initiated years before but that had only begun to move.

His chief unofficial interest was in military affairs, but he had translated that into conducting a seminar in defense policy for graduate students.

Edwin G. Boring, professor emeritus of psychology, works in his office at the psychological laboratories from ten to five each day, six or seven days a week. His serious work is editing a monthly journal, *Contemporary Psychology*—a job which he regards as running a laboratory of human nature. Early in 1961, he was going over data on women psychologists listed in the new Who's Who Among American Women—so that he might see statistically how much less distinguished women psychologists are than men and to speculate on some of the reasons why.

Miss Elisabeth Deichmann, curator of marine invertebrates, tries hard to get a whole day on her chief interest, the Antarctic Holothurians, a group of Echinoderms. Normally, though, she spends Saturday in her office and cannot take her summer vacation in the summer because of the rush of research workers who want to come then to the Museum of Comparative Zoology.

For R. R. Baxter, professor of law, there are three satisfactions. One is actual teaching, especially to a large class. A good performance is wonderful; a bad one agonizing. "A colleague once remarked to me, when I was sad about how bad I had been, that the real time to start worrying was when one lost that sense." A further satisfaction lies in writing—what counts is seeing the work produced in its final form. The final joy, he says, "is the happy relationships one establishes through teaching."

Frederick Mosteller, professor of mathematical statistics, works sixty-two or sixty-three hours a week. He got up one day in April, 1961, to watch "Continental Classroom" from 6:30 to 7:00, and went back to bed to sleep for an hour. The day had two high spots: a note from the president congratulating him on an honor he had received and a student's coming to him with a question that he and another professor had agreed no student would ever ask. He had a visitor late in the day and in talk with him stumbled on a nice problem for a student working on a thesis. He took the visitor home for dinner, the second that week with whom his wife had to cope without benefit of announcement. At midnight, after putting the visitor on a train, he was still working.

For L. Don Leet, professor of geology, the big project during the spring of 1960 was to work toward a clearer conception of the structure of the earth's interior from data collected by the world's seismograph stations on the largest earthquake of this century—that of August 15, 1950. As he says, "Seismology is a slow business, sometimes."

Joseph L. Massimo, teaching fellow in education, spent most of his time working with the United Community Services of Boston on a project for the vocational rehabilitation of adolescent delinquents.

And there's a professor from the Medical School who finds students both a delight and a frustration. "Harvard students, as compared with those from other medical schools, immediately recognize all the rare diseases. Confront them with a run-of-the-mill case, and they lose interest."

And another Cambridge professor found that the most interesting thing was his "egotistical preoccupation with my own forthcoming book."

Max Loehr, professor of Oriental art, found that he had had three words for the events of one day. Most *important* was his lecture. Most *enjoyable* was a student's fine work for a seminar. Most *surprising* was a gift of an early Sung ceramic piece for the Fogg Museum.

Perhaps the most nerve-racking day among these university people was put in by a Boston surgeon, who spends eight hours a day on his practice and teaches several hours. His day was spent in operating on one patient from eight o'clock in the morning until five in the afternoon to restore the blood supply in the lower part of the body.

What is there that characterizes these men and women—this elite which teaches so many of the American elite?

Meeting them, going about the university, talking with them, several things stand out as common threads through the diversity of an extremely complex group.

This is a hard-working group. Many, many Harvard people work hours that would make New York businessmen throw up their hands. As one of them puts it, "The content of boredom in these jobs is small, but that just means you work all the harder and all the longer." For many, the office hours are just something to get through so that they can go home and do their real work nights and weekends.

This is a very competitive group. Harvard professors are the product of a whole series of selection devices—schools, colleges, graduate schools, and years as instructors, tutors, and assistant professors. But even when they "have it made"—when they have become professors with the assurance of tenure—the pressure to continue toward excellence, to be outstanding, is heavy. "In the Faculty of Medicine," says one professor, "Harvard has the unique ability to evoke hours of loyal teaching without either recognition or payment."

More than spirit is involved. For each man with tenure there are perhaps five younger men—lecturers, research assistants, and so on—who are working for tenure. They must usually put in years on the lowest rungs of the university—tutoring, doing routine laboratory work, and so on. They must also do some original research and, if possible, get their work published so that they can secure the recognition they will need if they ever hope to become professors. On simple arithmetic, four out of five will not make it—and the four, for the most part, seem to get jobs at other institutions without too much trouble. But they come to Harvard to test themselves against the best, and leaving involves a real wrench. "Almost no one leaves Harvard voluntarily," says one of these young men. "You come here because you feel it is the best and if you can't stay—well, that puts scars on a man." One of the university psychologists says, "I can look at the situation of those people only with a bit of horror."

A Harvard professor, too, is an independent animal. This is partly in the tradition of the great universities: It is their function to lead society, to criticize, to stir, to stimulate. It is partly financial. If a professor cannot get the support he needs from his dean he is likely to find it in the Ford Foundation. And it is partly in the structure of the university itself—a professor may run quite a good-sized business with a score of people working under him and equipment and laboratories worth $100,000 or more.

The independence, above all, comes from a toughness of mind—a toughness which is not unique at Harvard but is seemingly nurtured there. Judgments are sharp and cut even those who are used to them. In commenting on the harshness of these judgments, one professor remembers a little ruefully a colleague's comment on President Eisenhower—a fake giant among real pygmies. He remembers also that Henry Adams said that being a student at Harvard is like being in a contest with a thousand judges. To be a judge among the judges involves the risk of some ferocious judgments.

Time after time, though, faculty people find that the outstanding thing about their colleagues is their accessibility and friendliness. One of them summed it up best perhaps in saying, "I am most impressed by the sincere desire of those with knowledge to transmit it on to others without any desire for recompense monetarily or attentively."

Perhaps the most common of these threads is one of respect—respect for the university and its purposes, respect for people working with serious purpose.

"Harvard is undoubtedly the greatest university in the world (my own prejudiced opinion)," writes one faculty man. "That people like myself recognize this fact characterizes Harvard completely."

Perhaps the most flattering single characterization of Harvard, though, comes from a scholar from Istanbul who spent some time in Cambridge. He was a friend of Joseph Massimo and Massimo once fell to arguing religion with him. Massimo asked him about the cultural view of heaven exemplified by his society. The Turk laughed and said:

"I could best describe it as a coed Harvard."

In these people is embodied the strength of Harvard. It was of the faculty and the impact they made on him that a student from Lima, Ohio, was thinking when he said: "Lima was one per cent of my life. Harvard opened up the other ninety-nine per cent."

But the collective strength of the faculty shows in many other ways. Many, many of the members are meeting the world each day—testifying before Congressional committees, investigating slum schools, making speeches before dozens of groups, dealing with reporters who come to their laboratories, entertaining foreign dignitaries, appearing on television programs. Here, by and large, they are strictly on their own—with no one from headquarters to check on their words. And their remarks are printed in newspapers all over the country. These are roving ambassadors dealing with the press in numbers that few corporations could match.

They are versatile in other ways, too. Many of them will carry on projects in the forefront of a scholarly field—writing history, advancing theory on semantics or cell structure—while at the same time administering libraries, running centers or departments that are fair-sized institutions on their own, or teaching basics to freshmen.

Proof of this versatility, from Harvard's viewpoint, comes in the smooth running of the institution. Deans will testify that a professor may carry on his programs for a year without bringing problems to them. And the university's chief officers, its president and its key deans, may be absent for months without having any real crisis develop.

In the end, of course, an institution is people. Harvard is an impressive institution because it has impressive people.

8

IN SEARCH OF . . .

LOOKING at Harvard as an institution in the midst of change, the most striking thing about its students is the sharp rise in their intellectual qualities.

Early in the 1950's the College began a carefully planned drive to raise the standards of its entering classes. It sent recruiters to the great private schools, traditional and important suppliers to Harvard and still the source of almost half the students entering the College. But it began to drive hard in the nation's high schools and literally sent its people to "beat the bushes." Crossroads communities in Montana and New Mexico that had not seen a Harvard representative of any sort in years were visited by these recruiters.

Perhaps the most important part of this effort was the drive in high schools. Where ten years ago Harvard would get applications from three students in a major high school in the Chicago suburbs, it may now get thirty or forty. The key to this success was in organizing alumni to scout and screen the best of boys coming up in each school.

But the swings through the back country fitted very importantly into Harvard's philosophy in selection. As Fred Glimp, dean of admissions, puts it, "We are not interested in a class of well-rounded men, but in a well-rounded class." In this concept, the boy from an Oregon crossroads, who had never dreamed of Harvard because he thought his family would need the wages he could earn in cutting timber, is as necessary as the son of an Evanston banker. The hillbilly has qualities just as essential to Harvard as those of a Park Avenue aesthete.

Harvard matched its reaching out for the best with a much older, seldom spoken of, but important principle. It has for many years made it possible for a good boy who can qualify otherwise to enter Harvard whether he has the financial resources or not.

It is part of the concept of a well-rounded class, too, that marks alone are not enough to qualify a man. The College looks for other abilities and for the fundamental qualities of character that make a useful citizen. Perhaps the most important is enthusiasm, or motivation. The College recognizes that a boy coming to the wilderness that is Harvard must go it on his own. The freedom Harvard gives a student carries a penalty—he must largely be responsible for himself and his own work. So the admissions people look for the drives that will carry a boy through on his own.

And over the years they have found that they must look for a certain stability and ruggedness in each boy. The boy who has been first or second in his class all the way through a first-rate high school may become profoundly depressed when he finds at Harvard that he is deep in the bottom half of the class. So Harvard tries to determine in advance that the boy who won so easily in high school will have staying power for rougher going.

The result of the recruiting drive: Harvard had 3,000 applications for the class of 1956—and registered 1,222. It had well over 5,000 applications for the class of 1964—and registered 1,212. More important, it had dramatically raised the intellectual level of the entering group. About 90 per cent of the class of 1964 came from the top 3.5 per cent of the age group, as measured by standings on the college entrance examinations.

Harvard thinks its entering classes now rate higher than those of any other large, general college—which was not true ten years ago.

Some of the small colleges still do better. Among them: Radcliffe.

This steady upgrading of the student body is an experiment which may have profound effects on Harvard.

Almost one hundred years ago, when President Eliot was pushing for the establishment of the Graduate School in the College, he was challenged by faculty members. Would not the attempt to teach graduates merely weaken the College? Samuel Eliot Morison, the Harvard historian, quotes Eliot as replying this way:

"It will strengthen the College. As long as our teachers regard their work as simply giving so many courses for undergraduates, we shall never have first-class teaching here. If they have to teach graduate students as well as undergraduates, they will regard their subjects as infinite, and keep up that constant investigation which is necessary for first-class teaching."

Morison, who studied at Harvard in Eliot's late years, goes on to say: "No prophecy of Eliot's has been more amply fulfilled. More than salaries, more than libraries and laboratories, the opportunity to train disciples in an atmosphere of professional study and creative scholarship has drawn great scholars to Cambridge."

In the same way, the rising level of classes is creating ferment among the faculty. Many an alumnus coming back to the College looks at the freshman and thinks something like, "Every year they get younger and brighter." Many a teacher knows it is true.

By the statistics, a boy who would have been in the middle of the class of 1956 would be on the very bottom of the class of 1964. "In effect," says Dean John U. Monro of the College, "we have eliminated the bottom of the class."

This has forced a whole series of debates—and changes. The College is taking more and more students on advanced standing, allowing them to skip freshman courses. Under Dean McGeorge Bundy, it introduced freshman seminars—regular meetings between teachers and small groups of students—in order to restore some of the intimacy between students and faculty that had been lost as the College grew. Perhaps most important of all, where a few years ago only about half the upper classes were able to work on an honors program, the College is now moving to eliminate many of these distinctions. In effect, all students will go on honors programs.

Harvard has not been alone in upgrading its students, of course. Faculty members all over the country were struck by the seriousness and drive of the World War II veterans who came back to college. By the late 1950's, the surge of World War II babies and the fact that a higher percentage of high school students wanted to go to college than ever before were giving all the colleges and universities a larger pool of applicants to draw on. There was, too, a change in the attitudes of these students. The idea of sliding through with a "gentleman's C," which had prevailed in prewar classes, simply disappeared. The "young tigers" wanted none of it. The turning point may have come about 1955, when Leavitt & Pierce, the ancient tobacco shop on Harvard Square, took out its pool tables. They had been gathering dust for years.

The College's reaching out for students, its drive to make itself truly national by taking boys from all parts of the country, has had side effects that will run for years. One of them is that a much smaller proportion of the entering classes come from Boston and New England. The second, which many an old Harvardian feels keenly, is that a boy can no longer count on being accepted at Harvard or on getting a break in admission simply because he is the son of an alumnus.

Another effect, felt by other colleges as well as Harvard, is that boys coming to college now have widely varied backgrounds. Before 1900, as Morison explains it, a boy coming to college had studied Greek for four years, Latin for six, and mathematics for ten. Whether from one of the great private schools or the classical high schools, he had already had a classical education and plenty of mental discipline. But this classical heritage has disappeared—in part because of the pressure of Harvard's own President Eliot, who campaigned for free choice for students in the high schools with much the same fervor that he had worked to introduce the elective system in Harvard itself.

In any case, students now come to Cambridge with little in the way of classics and a wide variety of experience. One consequence is considerable effort in remedial reading. Another, for the faculty, is, as Howard Mumford Jones puts it, "We can be sure that they will have only two things in common. They will have read one play of Shakespeare's and George Eliot's *Silas Marner.*"

When registration is over and the freshmen settle down in the Yard, they find that Harvard's selection policies and its willingness to extend financial aid have one other important consequence. About 90 per cent of those who enter survive to graduate—against an average of about 50 per cent in other colleges.

College students generally, and Harvard students in particular, are observed more closely than any other large group in the population. They are studied by teachers, masters, sociologists, pyschologists. The archives bulge with college books, including shelves full of reminiscences of student days, and yet we know relatively little of what students genuinely feel and think. Richard Henry Dana, who left Harvard to go to sea in the 1830's, left one of the finest accounts of what it was like to go to sea in sailing ships but he could not do the same for Harvard. Indeed, with the exception of a few classics, notably J. D. Salinger's *Catcher in the Rye,* there are few accounts that are more than fragments of the life of people of students' age that do ring true.

Some such thoughts as these were running through the mind of an old professor standing on the steps of Widener during the winter reading period. He watched students go, some in dungarees, some in business suits, some of them serious 'Cliffies in coats designed to keep lumberjacks warm. He had two observations to make:

"I'm struck by the way students nowadays go about by ones and two rather than in larger groups—and by how intent they seem to be.

"And I still wonder, after a lifetime of observing them, what it is that they are in search of. You may believe that you know them quite well and, still, you will never know quite what it is they are in search of."

9

AS STUDENTS SEE IT

My whole day evolved in complete independence from any authoritarian word from the University. My time was for me alone. The University trusted that I would use it to my greatest advantage.

THIS comment was written by a student at the time of the "diploma riots," April 26 and 27, 1961. Like any comment, it tells something of both its target and its author. It is a tribute to the university and perhaps the most revealing insight of students' feelings of any of approximately four hundred responses to a random and none-too-scientific survey.

Harvard's 14,000-odd students are an incredibly diverse lot. This, in part, is due to the nature and the policies of the university. Geography and a difference in ages and objectives make the Law School and Business School students feel quite apart from the College—and they are often wistful when they look to the Yard. Those at the Medical School live in quite another world—they do not even try to make comparisons between their lives and that in the Yard. The differences are substantial and are felt, and many of them spring from pressures of work in the graduate schools. "We are a dull lot of drudges over here—but, thank God, only for two years," as one Business School student puts it.

The question as to whether today's students are more or less spirited, more or less rebellious, more or less sophisticated than earlier generations can be answered only speculatively. We simply do not have comparative studies—and the change in the world over twenty years, and certainly over one hundred years, would make comparisons bootless, anyhow.

The one star that shines is diversity. As Mark H. Alcott '61 puts it: "It would be as simple a task to find a student who studies ten hours a day as it would be to find one who has not attended a class in the past three months. Both types are plentiful here. . . .

"I have known men whose outstanding interest is athletics: during one season they participate in a varsity sport, and in the remainder of the year they never miss a contest, be it lacrosse, basketball, or soccer. There are others who have never attended a sports event here, do not know where the stadium is, and think a crew is a kind of haircut. A student living down the hall spends ten hours a day every day in his room studying. There are those who could not give you proper directions to the library. High school wrestlers come to Harvard and are miraculously transformed into beatniks and theatrical people. There are those whose favorite pastime is translating modern French poetry into Greek; others spend five hours a day playing bridge. Socialists room with fascists; the son of a Rockefeller or Saltonstall suddenly decides that social clubs and debutante parties are not worth his time."

Nevertheless, some few things seem common to many. These, by and large, are people with active minds—their range of interests is enormous. Many find the high point of their day is dinnertime conversation, chance meetings with others in the Yard, just observing their fellows. They are quite determined not to be pressed into any mold. And, running among them, an unseen but felt thread, is a feeling that is perhaps truer of Harvard students than it is of those involved in other institutions. It is a feeling something like that of the Lilliputians viewing Gulliver. The Lilliputians captured Gulliver in his sleep; students riot on spring nights.

"The best thing I did today was to help organize the diploma riots." So said a sophomore.

"Personally, I'd rather have English on my diploma, but I'm all in favor of riots."

The riots were classic—the best in years. And they united students as did nothing else during the year. They came after the Harvard *Crimson* had run a series of stories reporting mounting protests against the university's decision to print diplomas in English rather than the Latin that had been traditional since the early 1800's. A spokesman for the Class Committee explained that the new diploma, which is only about half the size of the old one and does not carry the College seal, "is not the sort of thing you'd be proud to frame."

The riots had the Harvard touch—they were distinctive. Students found a battle cry, "Latin sí, Pusey no." A student, dressed like a Roman senator and wearing a garland of Yard shrubbery, made a speech of protest in Latin from the steps of Widener. Chanting students marched on President Pusey's home. He quoted them a bit of light verse:

> What's pat in Latin, and chic in Greek,
> I always distinguish more easily in English.

This was taken from a poem by Jane Hess.

Students then milled into Harvard Square, perhaps four thousand strong. They stopped cars, threw raw eggs and, in the end, were dispersed by deans, proctors, and police—with the help of tear gas.

Harvard was not amused. The Board of Overseers met a few days later and gave its support to the principle that "today it is entirely fitting and in accord with the traditions of the University that the text of diplomas be in English if the appropriate faculty so recommends."

Students, watching their own reactions and those of others, ran a gamut of emotions from amusement to disgust.

"Hey, you going to the rebellion?"

"No. I gotta date."

Many, while enjoying the riot, bowed to the pressure of time. Several reported hearing something like this: "Hey, it's nine-thirty. I gotta go study."

Many got their kicks in analyzing the whole thing.

• • • mostly they were out to enjoy the weather and spring exuberance with slight overtones of unease in response to troubled world politics.

• • • Harvard students showed they are natural, all-American type boys who love to raise a little hell on a spring night. Under any other circumstances the riots would have really gotten out of control. The fact that they did not is evidence of the power and control the university has over student life. Everyone is too afraid of the university to do anything. . . . It doesn't do this by rules, as I admit they are very liberal here, but by the academic pressures.

• • • I consider these riots to be very characteristic of life at Harvard. Not only do they demonstrate the willingness to express dissenting opinions, so commonly found here, but also the almost belligerent attitude of feeling free to rebel against authority if it is opposed to what is considered right or preferable by the student.

• • • Harvardians, while confronted with currents which affect their lives—Cuba; Laos—responded by turning back to the past in a riot for Latin diplomas. . . . Perhaps this retreat to tradition is typical of our generation, but I think it is even more applicable to Harvard.

• • • The new diplomas just do not preserve the dignity which Harvard has always in the past tried to bestow on such items . . . the violent reaction clearly shows that the student body (and many sympathetic faculty members) have an interest in preserving the Harvard tradition of doing things well.

• • • This incident is not typical of Harvard.

• • • The riots characterize the typically tradition-minded Harvard student. The school lives in an atmosphere of tradition which sort of breathes from behind every leaf of ivy. It generates a fierce pride in the institution.

• • • The riots illustrate the tremendous latent enthusiasm in the student body. Football games, athletics, extracurricular activities—and riots—brought out a zest and camaraderie that I never expected to find and was delighted to discover. This is one answer to the charge of "Harvard indifference," which has worried professors for years.

• • • Harvard riots are usually over fanciful objects—like "Pogo" or "Fight Mental Health."

Students also found a pride in the riots.

• • • Only here would people riot for Latin diplomas. Students found other ways of protesting that week.

Those who turned out for a lecture on "Sex and the Identity Crisis" found it was a hoax organized by a couple of clever sophomores who had turned in a notice to the all-college calendar. Along with the 120 male and female students who showed up were a few eminent professors.

And there was the student who reported, "One Friday night, I went down to the neighborhood restaurant with three friends. We dressed in tuxes, Russian hats, and sunglasses and sat there the whole evening playing Russian Scrabble. The trouble was that nobody noticed that the Scrabble game was in Russian."

Finally, a Radcliffe girl committed the sin of walking into the all-male Lamont Library and sitting there the whole evening, seemingly without being noticed.

A week or so after the riots, students taking a course in bartending sponsored by the office for summer employment asked for certificates to help them get jobs—and wanted them in Latin.

In the classic concept of a college—Mark Hopkins on one end of a log and a student on the other—what the student brings to the school is perhaps as important as what he receives from it.

What Harvard students bring with them, and what interests they develop in the vast range of activities around Cambridge alone, is a diversity that would easily outdo any attempt to catalogue it completely. Any compendium of one day's activities far overshadows a riot—for the riot, after all, will engage only a fraction of the student population for a few hours.

Indeed, the formal part of Harvard's educational program —which obviously channels the major part of students' time into organized work—may well be overshadowed by the informal. No one can know precisely, and any attempt to measure it would be fruitless, but it may be that students get as much from bull sessions with their contemporaries, from jobs and from trips, and from such informal sources as the *Crimson* and the Harvard radio station, WHBR, as they do from courses. Certainly, this is suggested by their reports.

Here is a sampling, with no attempt to classify, of the responses students gave when asked what was the most interesting thing they had done that day:

• • • A chemistry laboratory. We made a synthetic thiokol rubber. Perfectly fascinating. It bounced.

• • • Perfected a dodge in lacrosse that is unstoppable when executed flawlessly.

• • • Reading the *Pravda* that announced Gagarin's trip around the world.

• • • Visited a class at Phillips Academy.

• • • Tried my damnedest to snow some silly girl in my natural sciences lecture. As usual, I guess I failed, but if I'd had five more minutes, we'd probably be on our honeymoon right now. But that's life.

• • • My history class [intellectual history, 1890-1950] is the most stimulating course I have ever attended.

• • • Anything in the way of an intellectual moment of excitement usually comes when I am by myself attempting to integrate lecture notes, reading, and my own ideas. Getting a thorough grip on a thinker or a writer, not in terms of having read all of him but of internally understanding and entering his thought, is my highest experience.

• • • The new Loeb Drama Center has fascinated me. To the undergraduate, it is a shiny, new toy of which he has unrestricted use. I find that I must fight the temptation to abandon academic work for the fascination of activities around the university. This is the second greatest resource of the university, after the faculty.

• • • A discussion with a boy from Colombia concerning democracy versus communism, and how the people of America do not possess a faith.

• • • The week is a steady grind. Almost invariably the most interesting event will happen on a weekend—a mountain climbing trip, a crew race.

• • • A Saturday night tour of the Boston waterfront. Sometimes I fall in with a bunch, sometimes I just like to walk the streets alone.

• • • I completed a paper for history, twenty-nine typewritten pages, that I had been working on since February. The satisfaction derived from finishing it was immeasurable.

• • • I'm continually setting goals for myself: to study so many hours, give 'em hell on the rugby field, plan a weekend with my latest flame. When I succeed to some degree in any or all, I've done a most "interesting" thing.

• • • I called for the girl with whom I'm having an affair. We spent three hours in my room, then had dinner. I always find it thrilling that Harvard can make it possible for a poor boy from the Middle West on scholarship to do this sort of thing.

• • • The conversations I have with my friends. Not that classes aren't interesting, but they are routine. I enjoy the discussions because they are not set into any plan, but take any direction which we want them to take.

• • • The house league softball games. They are about the most fun I can think of.

• • • Talked to several people about signing a petition to Kennedy.

• • • Getting together to watch the Late Show has alleviated many pressures.

• • • It's the evening meal. Some of the boys come up with the most entertaining odd-ball ideas. One quoted the Bible, telling me of some flying angels, to show that Yuri Gagarin was not the first man in space.

• • • Discussed with eight other students the possibility of publishing our report on numerically controlled machine tools.

• • • A freshman seminar on historical geography, an unexplored field.

• • • I read a chapter of so from *The Chrysanthemum and the Sword*—also some snippets of medieval Latin poetry, sort of Elizabethan. Good to read in the spring.

• • • I have attended several of the dramatic activities which constitute one of the great delights of Harvard. Gilbert and Sullivan one night, a production of *Caligula* by Camus the next.

• • • The caliber of discussions at crew practice is a thing that never ceases to amaze me. There are quite often discussions ranging from the differences between Sartre and Kierkegaard's Existentialism to the psychological importance of trained pigeon experiments.

• • • Social life here can be a boon or a fiasco. Making it a boon requires considerable luck, time and money, so that eliminates dabblers like myself . . . my reading diet is science fiction, which I really enjoy, and my large Blues collection serves my musical appetite.

• • • A lecture by a scholar prominent in my field and dinner at the graduate commons with a small society of students.

• • • Read some verse (Eberhart); wrote a difficult letter; reread some of my papers.

• • • About 40 per cent of class time is interesting. If that fails, the high point of the day is between 8:45 and 9:00 when I get a few minutes with my *New York Times.*

• • • The habit of going to the river on Sunday afternoons will always strike me as distinctly Harvard. It seems to have something for every element of the student body yet as a whole is unique. The studiers study, the athletes exercise, the lovers seek out mates, and the dreamers meditate. No doubt many good books and good marriages are begun by the banks of the Charles. Going to the river is pseudo-European enough to be chic and inexpensive enough to be practical.

• • • Hearing W. Barton Leach's little side stories in class.

• • • The other day the members of my section bought a birthday cake and we gave it to our professor, Mr. A. James Casner, on the occasion of the 425 birthday of the Statute of Uses.

• • • Interesting things that happened during the day seldom have anything to do with Harvard—going out to the country to ride, going down to the house on the Cape, playing squash at the Club, sunbathing, a date for dinner and the theater.

• • • Going to the movies about every other night.

• • • Discussion of a case in Investment Management course.

• • • The weekend was spent with a lovely, affectionate French girl. *La Dolce Vita* occupied me one evening. The dynamic research in neurophysiology is continuously absorbing. After-dinner piano recitals by my classmates brighten every day.

• • • I spend most of my time at home in Newton. When I am in Cambridge, though, I like to treat myself to a tour through the bookshops. The best time do this is when there is no rush and when you have no money in your pocket. Having spent hundreds of dollars of imagined money, you return to reality via the fifty-cent splurge on a paperback.

• • • I took my sister, a college freshman, on a walking tour of Boston, mostly along the Atlantic Avenue waterfront.

• • • At lunch discussed the assumptions behind Bertrand Russell's statement, "I'd rather be Red than dead." Reading a sermon by John Donne.

• • • Discussion at lunch with a tutor about a paper I'm writing for David Riesman's class. Talked with one friend about the Truman-MacArthur fight. Later, about 11:30, went to Cronin's with another friend in celebration of my twenty-first birthday to discuss the glory of the Marine Corps and their success at Chosin.

• • • I wrote a lyric for a song that is part of a musical I've been writing.

• • • Today nothing interesting happened. I got up quite late and spent some time fixing up my motorcycle, which . . . will greatly enhance my spring social life.

• • • Spent a weekend at a Boston hotel with a girl from a nearby junior college. The theory about these junior colleges is that their motto is "A Ring by Spring."

• • • Went to a class given by Paul Tillich. He brings more to a lecture than any teacher I know. The class is more than an intellectual game. It is a total experience.

• • • Having a new philosophical idea.

• • • Originating and planning a tour of the entire class through the Boston Navy Yard and the U.S.S. *Lake Champlain* (my former command) which was in drydock. (This from a U.S. Navy captain enrolled at the Business School.)

• • • A supplementary text on the Chinese language. That must make me sound like an awful pill, but it did give me a good look at the progress I have made in a year, and the amount of work that lay ahead. The book was good enough to make me want to go ahead and learn more, yet bad enough to make me hope that when I have learned a little more I can write it up even better.

• • • If you can call two-hour exams in Organic Chemistry interesting, then that was it. I did have a chance to boo and hiss at my laboratory instructor before our exam. That was satisfying. . . . A date read me some poetry on Friday night. The poetry wasn't bad. Wish there were some way I might have access to her poetry without her.

• • • Twice a year I am stage manager for the Loeb Drama Center—fourteen hours a day. At other times I save my free time for rock climbing, cave exploring, or political activities.

• • • My math class. My favorite 'Cliffie sits with me, and the other members of the class are quick and enthusiastic.

• • • I had three hours of classes scheduled for today, all of which I overslept because I spent the night before renovating an antique banjo of my great-grandfather's. . . . To me, the chance for four years to be among contemporaries and fine teachers and interesting people, the opportunity to learn to *live* in this environment often leads me to think that all requirements are a nuisance. I suppose this atmosphere is the legacy of all of the few great universities—the people might not be as interesting were they not obligated to read as much as they are. I have favored the balance toward living in perhaps a deeper sense, rather than toward scholarly activities, although the scholarly activities occupy a lot of time. The question of whether I possess that lovely goddess, "Intellectual Curiosity," is for me still open. Harvard is fine for those who enter at seventeen years old with this trait fully developed. It seems to be more difficult for a youth to acquire once he is immersed in the "Cambridge of many aspects."

• • • At the law school, the recommended amount of hours of work is fourteen. This is unnecessary and burdensome. . . . The most interesting thing in my day is being home with my wife; reading books, papers, or magazines and discussing these with her. All of these activities are totally unrelated to the school.

• • • Yesterday my tutor suggested that I go to see Dr. William Yale in connection with my paper on Syria in 1919. He was an old man in a dingy office at Boston University. He reminisced for two and one half hours and changed history to a living reality for me.

• • • I have been learning to interpret handwriting. A girl who lives across the hall is teaching me as an aspect of her seminar in Abnormal Pyschology. It is a slow process because no one book is entirely correct, but I am getting to be able to tell even what moods people are in when they write me.

• • • A new play, *Ballad of a Sweet Dream of Peace,* by Robert Penn Warren. Warren in the brief space of forty minutes produced a play so rich in thought and implications that it filled the rest of the night with meat for discussion . . . reading, or rather struggling to comprehend, R. Carnap's *Logical Syntax of Language* . . . searching through used bookstores, a labyrinth of dust and treasures . . . wrestling with n-dimensional vector spaces.

• • • Learned more about I.B.M. operations, an exciting aspect of doing research in psychology. . . . Harvard radio (WHBR) is an exciting facility of the college . . . I read *Freedom and Culture* and the next day went to talk with Dorothy Lee, the author.

• • • I went to the Radcliffe library to try to locate a book for a friend, got sidetracked and started to read anthropological studies from various university research centers. I could have read for hours.

• • • We talked about the article in last week's *Crimson* on oral contraceptives and what impact they would have on college students.

• • • Was walking through the Square tonight with my date, a Southern conservative, and passed a friend (male, whom I have dated) walking with a Negress whom he dates. As we passed each other, we said hello. I thought my date was going to beat me right there.

• • • The people—especially meeting new people as patients in the hospital and learning the facts of their life with the intention to understand both their diseases and their personalities.

• • • A government official from Argentina who said that I was right when I suggested that the New World had no use for political ideology born in the Old World.

• • • John Q. Adams Society meeting.

• • • A visitor, the Cambridge cops. They hate our room.

• • • A writing course with Albert Guerard—it's the only kind of course which approximates relaxation at Harvard. People are not concerned about pleasing, and so the course is a wonderful oasis in the week.

• • • Reading Robert E. Sherwood's *Roosevelt and Hopkins.*

• • • It was most interesting to see how poor an analysis I made of a marketing case, even though I had spent many hours on the case. I learned to probe more deeply.

• • • Today, as is often the case, the most interesting part of the day is a walk to the Square, where my roommate and I observe all the queer birds who live on the other side of the river.

• • • Today is the first of May. In New York, Julie Andrews is singing catchy lyrics which no doubt will immortalize this "lusty month." In Havana and Moscow and Budapest the workers are enthusiastically canonizing Gagarin. In Cambridge, Law School examinations are about four weeks hence. I lessened the possibility of intellectual disaster.

• • • Reading *Patterns of Sexual Behaviour,* which is hilarious.

• • • Most interesting is probably to be allowed to use the library to write a paper on an obscure subject.

• • • I read some Milton.

• • • Rehearsed with the Glee Club Far East Tour group.

• • • A searching analysis of the role of the United States in world affairs by a very stimulating student from the Near East . . . a date with a delightful student of nursing . . . I have been immersed in various writings by Professor Paul Tillich . . . I finished writing a review of ecumenical movements in Modern Church History . . . a friend called from New York to inform me that he would be going to Africa for three years.

• • • Read Yeats from a book in the Houghton Library which contains Yeats' own written changes (in the margins) for the next edition.

• • • Each Tuesday I work voluntarily in one of the settlement houses in East Cambridge with a group of ten boys aged ten to thirteen. This is my major extracurricular activity and is one I find to be most interesting, challenging, and, in the end, rewarding.

• • • Hell, it could be anything from sex to theory.

• • • Students are lovely people. A warm attitude and a kind gesture is a rare and wonderful thing. A short chat with a fellow student and a human contact is made—so that he suddenly lost his fear—for a short while—of being alone in a pressing and very competitive environment.

• • • For the past four days I have been entertaining a visitor from my native country—Israel.

• • • A letter in the form of a parody of the farm situation which I sent my aunt was a lot of fun.

• • • Tape recording an opera.

• • • Professor McClelland explaining family variables which lead to high levels of achievement motivation.

• • • What seems to me to be the problem is that every moment of my day, my waking hours, is filled. I run from deadline to deadline, which tends to take away my enjoyment of what I am doing at the moment.

• • • Meeting the man I love in the morning for coffee before classes.

• • • What I enjoy most are the conversations I have with good friends, dates, teachers, and miscellaneous citizens. People around here are perfectly ready to be friendly and very helpful if one is willing to give them incentives by treating them that way first. Cold Harvard isn't cold if one makes an effort.

• • • The single most interesting thing today was a conversation with Professor George Wald after a lecture on the eye. The most interesting thing of *any* day is seeing my friends.

• • • I worked as a bartender for a professor from M.I.T. They're an interesting crowd.

• • • Got three for four at bat.

• • • Final preparations for an oral and written presentation to the president and executive committee of a company for which a group of Business School students are doing a marketing study.

• • • Lacrosse game. I am goaltender for a so far undefeated team. Took a date to a house play, Camus' *Caligula.* Read *Henry V* for pleasure.

• • • Playing the guitar.

• • • Went to a dreary party for the cast of a house play.

• • • So much to do, so little time to do it. I had a physics lab in the morning dealing with the cathode ray oscilloscope, that was fascinating. Had lunch with a girl I want to marry someday, that was fascinating. Did a story for the *Crimson,* that was fun. It's like this every day.

• • • Attempted to develop "objective" descriptive categories of the physical activities of a four and one half month old infant, my daughter.

• • • A discussion with a friend from Harvard School of Education about the use of the problem analysis method of teaching in high schools.

• • • The most interesting thing I did today was hearing a delightful man in morning prayers at Appleton Chapel who said among other things that the only mortal sin is despair.

• • • At the Littauer Center, the most interesting part of the day is the "coffee break" where one can listen to the experts (and those not so expert) resolve the problems of the world.

• • • I built a tetrahedron-shaped kite for the Graduate School of Design kite-flying contest.

• • • My practice teaching. Here I come up against the hard practicalities of the teaching world.

• • • Meals in the house or perhaps get-togethers in the hours after the library is closed. Here you get thought and speech not guided by any outlines.

• • • Went to see my psychiatrist. We talked about problems I have been working through for over a year. Harvard and factors in my past have made the problem of competence highly emotionally loaded. I left with a feeling of having really dealt with the problem.

• • • A course at the Business School on technical innovation . . . a controversial and highly avant-garde course. It is a good example of the attempt of one professor to induce a profound nonconformist attitude in our thinking.

• • • I studied to five in the morning and slept through all of my classes. This is the Law School.

• • • Reviewing old (last spring's) notes in light of this year's knowledge. I also did some writing on a short story—went particularly easily.

• • • A drunk tutor in the House knocked on our door at two o'clock in the morning and entertained us until three-thirty. He's a very, very brilliant man, very bored with life, and great fun when drunk.

• • • Read a few chapters from de Tocqueville.

• • • The head of the course was speaking about utopian thinking in the United States. His statement that most people are searching for private utopias and sort of give up on the rest of the world hit home.

• • • Sat on the grass outside her house.

• • • A discussion at dinner about the proposed East African Federation with fellow members of Project Tanganyika, which intends to send twenty students to Tanganyika for the summer.

• • • I brought a girl into my room and went to bed with her.

• • • Working for the Phillips Brooks House Prisons Committee. I spent Tuesday evening at Walpole State Prison teaching a German class of four to six prisoners.

• • • A string quartet engaged in an impromptu concert in the Yard.

• • • A private experiment in "optical pumping." Most fun was bicycling to Walden Pond.

• • • Listening to Senator Goldwater. Afterwards a few of us gathered around him and pinned him down in a discussion for over half an hour while the janitor was desperately trying to close up the room.

• • • Attended the Metropolitan Opera.

• • • Mineralogy lab—then practiced for an hour on the piano.

• • • A conversation with an associate of the college during lunch at the Signet Society. He turned out to be a friend of the artist, Andrew Wyeth. The latter being a favorite of mine, the conversation was especially meaningful, and it was followed by an invitation to see this associate's collection of Wyeth originals.

• • • I'm in love with the most wonderful girl in the world!

• • • I read one of the most fascinating, exciting, and at the same time depressing books that I have ever come across —*We* by Eugene Zamiatin.

• • • Operated a student telescope.

• • • A discussion about Sartre and Heidegger on death. Studying subatomic particle decay reactions.

• • • A tense, two-hour rubber of bridge with one slam bid and two settings of over five hundred points.

• • • Sang rock 'n' roll.

• • • Visited my second child for the first time after birth.

• • • The grand opening of the Robertson Bequest exhibit at the Fogg Museum.

• • • Two of us drove around Boston looking for a place that would sell us real parchment.

• • • Seeing that the sun was shining!

• • • My work in the dining hall. I enjoy watching the people file in—read their papers and so on. The working women are also interesting—some are fun and easy to work for, and some mean and perhaps even lazy.

• • • Went to see T. S. Eliot's *The Cocktail Party.*

• • • At 9:30 A.M. on the morning of May 1, a blessing in the form of a baby daughter (6.5 pounds) descended upon the blissful household of our illustrious ex-roommate. Following birth much beer was consumed. P.S.—Everyone bombed, including father.

• • • Lecture by Lillian Hellman.

• • • A lecture on action of hormones on metabolism.

• • • Discussing international relations, especially the Cuban situation.

• • • Discovering that Section 1031 of the Internal Revenue Code of 1954 has been applied in directly opposite ways by the second and eighth circuit courts.

• • • Considered buying a sports car.

• • • People going from class to class are an education in themselves. The beards, the long hair, the saris, the Ivy Leaguers, the beats, the casual—all make up the most amazing collection of people in one place that I have ever seen.

• • • Planning my schedule of courses for the next three years. The variety offered is amazing.

• • • Picked up a book on Hebrew from the library—the present fad in my almost compulsive language learning.

• • • A conversation with a senior professor here at the Business School about my selection of a permanent job.

• • • Lecture on the relation of art and religion by Professor Tillich. This is the most lasting memory I'll have—listening to the lectures of a really great man.

• • • The most interesting thing I did on my own this year was to become a Roman Catholic.

• • • Singing with Harvard Krokodilloes.

• • • Discussion with a Belgian student. How has our image changed since World War Two—the U.S. has extended its influence physically, but has withdrawn spiritually.

• • • Roommate wandered in at four A.M. to tell me about a party.

• • • Skiing at Cannon Mountain.

• • • Obtained several offers of summer jobs.

• • • Picketing against bomb shelters on Boston Common. Then, in class, cross-questioning Professor Kissinger on U.S. foreign policy.

• • • Naval R.O.T.C drill followed by a Taffrail Club beer blast.

• • • My girl and I joined the multitude down by the Charles River—sunbathing!

• • • Discussion of very new and stimulating explorations of the sleep and dream cycle, enlarging our concept of sensory deprivation with a new dimension—dream deprivation.

• • • Designed a bookcase.

• • • Freshman glee club trip to New York.

• • • Seminar on disarmament.

• • • What has affected me most is trying to determine my place in the scheme of things—will I be satisfied with a good job, good wife, and so on, or will I want something more? This investigation is a constant process.

• • • I stood on the corner of Tremont Street and watched the people go by—and people fascinate me.

• • • The most blissful experience of my own was in writing my thesis.

This list—most of the items no more than hints on single points in the days of only a few students—could be multiplied many times and still would not represent the full measure of the activities of students on any one day.

This is a most indefinite index—but it does suggest the huge array of resources on the part of the faculty, the university, and the metropolitan area that Harvard students draw upon.

Finally, the list suggests that even a considerable riot is small in relation to the totality of activity. Even so, the riot perhaps deserves the last word in any discussion of the diversity of students' minds.

Almost three weeks after the riot, and well after the editors had dropped the subject, this small, classified ad appeared on the last page of the *Crimson:*

> Disappointment
>
> Vent your diploma fury on a Presidential dartboard. President mounted on soft sponge. Orders taken at 9 Linden Street or call TR 6-0843. Group rates.

10

JUST WHAT ELITE?

CONSIDER a university as a community in which two groups, faculty and students, meet and mingle, learn from each other, stimulate each other. In the process, students are probably as important as faculty; in the end, they shape the university by the demands they put on it, by the support they give it.

They will do much more. Students coming into Harvard College will feed into the graduate schools, doing much to determine their standards, and, inevitably, many of them will become members of the faculty. They will go into business, into teaching, into government, They will have an impact on American society, and as alumni they will have considerable influence on the university.

So, the selection of students is as important as the selection of faculty in shaping a university. This is one of the real keys. This is the gate that determines much of what the long reach of the university will be.

Within the university, too, admissions policy is crucial—and in Harvard it comes to bear primarily on admissions to the College. All teachers want better, brighter students, scientists want more scientists, historians want more historians, coaches want more athletes. The place where all the pressures focus is on admissions policy, and the office of the dean of admissions is something of a fortress, always under siege.

And in a society slowly establishing new educational standards for itself, Harvard's eminence and prominence mean that a good many people watch Harvard's admission policy. In a complicated society problems beget problems, and these in turn beget problem solvers. The society looks to the schools to produce its problem solvers, its scholars, its philosophers, its computer experts, its space scientists, and its accountants. So admissions policy involves very basic questions:

• • • What are the needs of society—what kind of experts does it ask of you now, what kind will it need thirty years from now, when today's students are running things?

• • • What kind of college or university do you want? Do you want one that turns out scholars—who may be eminent but relatively poor? Do you want one that turns out businessmen, who may not be so eminent but who may be able to endow professorships?

The questions, of course, all interact. And the policy is not made in a vacuum—inevitably, Harvard has to consider its competitive position with other schools; they, too, can siphon off many of the men Harvard might like to have.

For Harvard, these questions began to come into sharp focus in the fall of 1961. The time had come to judge its own success.

Through its first three hundred years, Harvard had accepted almost all who applied. As long as they could meet the academic requirements, and pay the bills, they came. As late as 1933, according to the 1960 report of a Special Committee of the Faculty, 1,059 were admitted out of 1,297 applicants. In the thirties, too, Harvard began, with President James Bryant Conant's national scholarship program, a major effort to make itself a truly national institution.

But in the 1950's two things happened. Along with other prestige colleges, Harvard was flooded with applicants—applications for the 1,200 places in the College climbed rapidly to the 5,000 level. And Harvard began sharply to raise its standards for admission. The results were highly impressive. The median student in the class of 1964—the man in the exact middle of the class—would have been in the top 10 per cent of the class eight years before.

Harvard, of course, uses other standards than strictly academic. It is seeking that hard-to-define human being known as a "good man." It will frequently turn down the top man in a high school class in favor of the tenth man.

But the very success of the recruiting and academic standards policy brought the College up against the question of a "top one per cent policy."

About half of Harvard's entering class now would fall in the top 1 or 2 per cent, as measured by the scholastic aptitude tests. The rest cover a broader spectrum—perhaps the top 10 per cent. The measures are not fully accurate, as anyone using them knows. They cannot pick a "creative" scholar. They may exclude boys who are late in developing. They may exclude some who will become good scholars simply because they are work horses. "Hard work is worth at least a hundred points on the scholastic aptitude tests—and maybe several hundred," says one Harvard admissions man. And the records prove it; each year there is among the small group who graduate with highest honors at least one whose scholastic aptitude ranking says he has no business being there. Finally, there is no law that says someone who is bright is automatically an anemic Widener worm—many of them are athletes.

Grant all the caveats, though, and there is still a basic and growing question, brought on in part by Harvard's very success in attracting the bright: How much higher should Harvard jack up its academic standards, and should it continue to raise them until its entering class is almost entirely from the top 1 per cent?

Few questions generate so much heat around Harvard. The university has always drawn an elite of sorts. One dean of not too long ago said bluntly that Harvard wanted the very rich and the very bright. Now admissions men have demontrated that, while they cannot guarantee that their tests will identify the brilliant scholar of the future or the future presidents of the United States, they can produce a very high level of superior students.

So the question now is: What kind of an elite does Harvard want?

This question was brought out in its many aspects in a series of reports that came within a few months of each other.

What the Harvard College student is today was shown in a report done by Michael Shinagel of the Office for Graduate and Career Plans. A study of the Class of 1961, it raised its own questions: Are we creating a national elite of professional scholars? Is scholarship becoming not a means to an end but an end in itself?

The chief findings:

• • • Almost two thirds—64 per cent—of the class planned to go immediately to graduate school. Some four fifths—82 per cent—planned to go into graduate study eventually, after military service, a period of work, or travel.

• • • Only 15 per cent of the class expected to go into a full-time job upon graduation. This was slightly higher than in preceding years—it had been 13 per cent in 1958, for example. But the preceding fall, when Shinagel made a similar survey, only 8 per cent of the class had wanted to go to work. Apparently some found they could not qualify for the graduate school they had wanted.

The migration to graduate school was not new. But it had reached a new peak. Some 62 per cent of the Class of 1960 and 56 per cent of 1959 planned to go on to further study.

Nor was it unique at Harvard. Shinagel surveyed other Ivy League and New England colleges, found that almost 60 per cent of the Ivy League graduates planned to go on to graduate school. Harvard, though, with 64 per cent, was the highest of the group.

What's behind this avid desire for advanced study? Shinagel suspects that its roots lie far back in secondary school and in the society as a whole. Any child who hears of the "baby bulges," the "tidal wave of students," and the "academic rat race" knows that he is going to need a good record and good grades in high school or prep school if he is going to get into anything like the college he wants or that his parents want for him. He may also hear of the concern about grade-grubbers and students who specialize in developing "test-taking skills," but he has no alternative. He has got to show some degree of intellectual achievement, and the promise of more, to get into college.

So Shinagel suspects that when the freshman gets to school he is already well on the way to becoming a professional scholar. He cites a survey at one New England liberal arts college which showed 97 per cent of the entering class expecting to go on to graduate work. An overwhelming majority of Harvard freshmen indicate that they anticipate graduate study by their choice of careers.

And, in fact, this is in line with what the society expects. Education has been the American patent for solving the problems of the world ever since the New England schoolmarms climbed into covered wagons to go to the great West. There is today an obvious correlation between years of school and income: the more school the more money, generally. And the "price is right." Harvard students with advanced degrees in such fields as electronics can command $12,000 the day they leave the Yard.

The pressures within the schools go in the same direction. The first-class citizen in college now is not the athlete but the honors candidate. In fact, the athlete at Harvard is usually dismissed as a "jock"—and the one house that has been famous for its athletes is doing its best to see that they are spread around among other houses. The whole atmosphere of a college—the austere regard for intellectual achievement, the model of professors, the competition for scholarships, and the increasing availability of scholarships for graduate work—adds up to make the graduate school look like a small heaven. And, in truth, some find it is. It is not unusual to find students spending ten years in graduate school. Tom Lehrer, who achieved a national reputation for writing satirical songs and went on the night club circuit for several years, came back to Harvard, for his eighth year of studying physics and teaching. There are many others.

But there are aspects of this that have not been fully thought through. Shinagel points to several. There is a sharp flip-flop in plans of students in the College. There is a "chiasmic reordering of areas of concentration between the freshman and senior year for the Natural and Social Sciences. Whereas twice as many stated intentions to concentrate in the Natural as in the Social Sciences, almost the reverse actually occurred by graduation." Or, as one Harvard historian puts it, "They come here thinking they're going to become great physicists and find they don't know any math. So we get them."

Then, too, businessmen are finding that it is less profitable to recruit at Harvard. The number of recruiters coming to the College dropped 30 per cent from 1960 to 1961.

Looking at the process of creating homogenized scholars, Shinagel concludes by asking: "Isn't something out of joint when four out of five Harvard seniors embarking on a job after graduation still entertain further graduate study plans?" In other words, who's going to do the work of the world?

Then came a report that set sharp words flying. It came from William J. Bender, who had been in charge of admissions to the College during the 1950's, when standards were raised dramatically, and who had retired to the shelter of a Boston charity trust. Bender is a gruff realist, a "Mennonite with a conscience," his friends say.

Bender documented the rise in admissions standards and the increasing geographic spread of Harvard applicants. He had his doubts as to how well test scores measure men, but he concluded, "I believe that the present Harvard student body is much the ablest academically in our history. What gives me even more satisfaction, it is an extremely fine collection of human beings, by any standard. I have more doubts about the ability of Harvard College under present conditions to give these men an education worthy of their quality than I have about them as men or scholars."

He raised some questions. With Harvard's tuition charge now $1,520 and the total annual cost of a boy at Harvard approaching $3,000, Harvard is in danger of becoming a college for upper-income families. Even with a vast increase in financial aids for students, a boy from a poor family simply may not be able to make it. Even now the average family income of those receiving financial aid from the College is $7,700—which is above the median for all U.S. families.

Bender was concerned about Harvard's ties with Boston, which have historically been much closer than most universities have with their cities. In eight years the share of Massachusetts boys in the College has dropped from about 36 per cent to 21 per cent. More dramatic: there are only 35 commuters in the Class of 1964—about 3 per cent of the class where commuters had made up 20 per cent before World War II.

But Bender grew eloquent on "1 per cent policy." "There are needles a foot long in there," said one Harvard professor referring to the sections of the report where Bender talked of faculty attitudes.

Bender felt that Harvard would be in fact carried by the forces loose in the society to a 1 per cent policy—that it would become a factory for Ph.D. types—unless it actively resisted. He asked if the alumni would support a 1 per cent policy—would the Harvard Club members who now tap perhaps half the boys who come to the College keep on doing so if Harvard took only geniuses? Would the counselors in secondary schools, particularly the great private schools like Andover and Groton, support it?

And he wound up with paragraphs in which his convictions sang:

"I do not believe that the country, or Harvard, has been the worse for its Harvard-educated Presidents (and senators and cabinet officers) few of whom have made brilliant academic records at Harvard.

"Is it really a good thing to strain so hard to get the 'best' students, particularly when no one can define or identify the 'best' when we are dealing with seventeen-year-olds and there are so many kinds of 'bests'?

"My prejudice is for a Harvard College with a certain range and mixture and diversity in its student body—a college with some snobs and some Scandinavian farm boys who skate beautifully and some bright Bronx premeds, with some students who care passionately if unwisely (but who knows) about editing the *Crimson* or beating Yale, or who have ambitions to run a business and make a million, or to get elected to public office, a college in which not all the students have looked on school just as preparation for graduate school and graduate school as a preparation for they know not what. Won't even our top-one-per-cent be better men and better scholars for being part of such a college?"

New voices are making themselves heard in the arena. The psychologists concerned with education have come in to make their doubts on admissions policy heard.

A Harvard psychologist, David C. McClelland, writing in *Daedalus,* points out that Americans have discovered and are vigorously developing a system for encouraging excellence. He sums it up: "The best boys should go to the best schools and on to the best jobs." The means of identifying excellence are objective pyschological tests, which are used in a national talent hunt to find the boys, award them scholarships, sort them into the best schools and on to graduate school, and in the end aim them into jobs. The tests carry enormous weight, says McClelland, for two reasons. Americans believe in achievement and in giving everyone a fair chance on his merits. The tests are practically the only way of measuring merit—for, regardless of what selectors say are their criteria, the tests are the one way of measuring or comparing one boy's ability to that of another, so the effort to select by character or curiosity or other human intangibles is left aside.

This, as McClelland points out, leaves some of the most valuable of human characteristics out of the count. The system works particularly against women, who can race through school and into jobs competing in a man's world for places awarded on men's ideas of merit but who can never earn credit for some of the qualities in which they are supreme and which also make life worth living. He cites such things as "sensitivity to other human beings, compassion, richness and variety of imaginative life."

Merit testing, too, overlooks a huge area of values, outlook on life, what Madison Avenue would call the "image" of a college.

A preliminary study at Harvard, for example, suggests that the university is still having much the same effects in shaping students that it did one hundred years ago. It turns out students who tend to feel indifferent, superior, and slightly disillusioned. McClelland feels that Henry Adams' description of the Class of 1858 is still amazingly accurate:

"Free from meannesses, jealousies, intrigues, enthusiams, and passions; not exceptionally quick; not consciously skeptical; singularly indifferent to display, artifice, florid expression, but not hostile to it when it amused them; distrustful of themselves, but little disposed to trust anyone else; with not much humor of its own, but full of readiness to enjoy the humor of others; negative to a degree that in the long run became positive and triumphant. Not harsh in manners or judgment, rather liberal and open-minded, they were still as a body the most formidable critics one would care to meet, in a long life exposed to criticism."

This is a Harvard style, its own standard of excellence in a sense. Why should not Harvard and other colleges go on to encourage their own varieties of excellence? This is McClelland's point: Why not put "less stress on the purely academic side of life and more stress on the unique styles of educational institutions that most influence such other human qualities?"

Another Harvard pyschologist holds much the same view. Jerome S. Bruner, in a small book called *The Process of Education,* which may hold the seeds of the next revolution in education, said it this way:

". . . If the dangers of meritocracy and competitiveness, the risks of over-emphasis on science and technology are to be dealt with, we shall have to maintain and nurture a vigorous pluralism in America. The theater, the arts, music and the humanities as presented in our schools and colleges will need the fullest support."

All these issues are in one sense but crosscurrents in the tremendous reaching out of 180 million-plus Americans. The United States is committed to putting men on the moon—an effort which will absorb the work of thousands of highly educated persons. The United States is committed to a vast effort to raise its own standards of literacy and education, and there is perhaps no better measure of that than the fact that Americans each day buy a million paperbound books. And the United States is reaching to other countries on a scale never dreamed of before. One measure of it is that Stanford University alone has four campuses abroad—in Germany, France, Italy, and Japan—and hopes eventually to have one third of its undergraduates studying abroad.

These forces have a tidal pull on the universities, and the pull will become greater. In the end they come down heavily on admissions policy. Harvard, being Harvard, will feel them as much as and perhaps more than other institutions. Harvard, being Harvard, will make its own decisions, put its own stamp on the kind of classes it will be admitting five or ten years from now.

But, clearly, the lines are being drawn for battle.

And it may be one of the classics of the strange world of education.

11

THE FELLOWSHIP OF EDUCATED MEN

COMMENCEMENT DAY. Ancient ritual unfolds. A company of Lancers on horseback escort the Governor from Boston. They are buffoons in the asphalt heat of Harvard Square—but gentlemen proceeding as they have for more than a hundred years. The academic procession, the march of the faculty and officers in the bright colors of universities all over the world—a rite that goes back to the medieval beginnings of universities. The great quadrangle between Widener and Memorial Chapel, green and gold in the bright sun, a setting so perfect, a day so perfect. The tradition is that the sun always shines on Commencement Day at Harvard.

Some fifteen thousand persons assembled in quiet listening, straining eyes to see the dignitaries speaking under a white awning over a stage before the church. More than three thousand students, most of them in severe black, waiting. This, in the immemorial phrase, is the end and the beginning.

For the seniors graduating from the College, the climactic moment arrives. They have already received their diplomas from the masters of their houses. Now they assemble before the stage. President Pusey addresses them briefly—in Latin, a variation in which a classicist makes his riposte to those who had rioted when they heard their diplomas would be in English for the first time in generations. He comes to the decisive moment, telling the new Bachelors of Arts in the traditional language:

"By virtue of authority delegated to me, I . . . admit you to the fellowship of educated men."

This was the moment toward which students had worked for years, it was the point to which the resources of the College were dedicated, it was a milestone toward which scholars and teachers in Western universities have worked for seven centuries and more. And it sharply raises the questions: Just what is a Harvard education? What is the product for which so many work?

Fathers, sitting intent on the edge of wooden chairs, let their belts slip a bit. Mothers, here and there, showed the smile which covers a tear. The new B.A.'s, in groups, march awkwardly to their seats. The ceremony sweeps on, the pageant unfolds, no one pauses to wonder just what has happened, just what the magic words mean.

Part of the answer lies about them. The atmosphere of Harvard, difficult to define, part myth, part reality, part old-line Yankee, part of men working ahead of their times. It is perhaps best focused in the saying that "You can do anything at Harvard, as long as you do it well." Part of the answer, a large part, is among the people taking part in Commencement. There is abundant testimony that students learn as much from each other and from informal contacts with their seniors as they do from the formal program.

A large part of the answer, too, simply defies an observer. "Education," says Frank Keppel, dean of the Graduate School of Education, "is what goes on in the heads of people around here." For each it is different. Harvard is such a complex, subtle, many-headed institution that every person involved in it, from the crusty old house master to the diffident Radcliffe freshman, finds his own world in it and makes his own life within it. Finally, in the nature of human experience, education is like love or the search for truth or music—it is extremely difficult to write meaningfully about it.

But the basic requirements for a student coming to the College are rather simple. During the four years he must take a minimum of sixteen courses plus a half course in English Composition in the freshman year.

The second requirement is that a student must have, pass a test on, or take a course in a foreign language—and one in which Harvard can set an examination.

The third requirement is "concentration," a hallowed word at Harvard since the days of President Lowell. It is a *major* at any other college, must be chosen at the beginning of the sophomore year, involves taking six courses of the sixteen each student must take in one field, such as English or Mathematics. Or it is possible to combine two fields—Mathematics and Philosophy, for example.

The fourth requirement is distribution or General Education: again from President Lowell, "Every educated man should know a little of everything, and something well." This forces every student outside of his specialty, ensures that graduates have a body of knowledge in common. A nonscientist, for example, does not take a course in biology that is designed for future biologists. Instead, he takes a General

Education course, such as "The Atom and the Stars" that is designed to give him the broad knowledge in the area that he will need as a citizen.

General Education—a program developed from a report that was largely the work of Paul H. Buck—frequently cuts across or ignores departmental lines. Each student is required to take three such courses in his first year in the three major areas of knowledge: the Humanities, the Sciences, and the Social Sciences. Then, in his last three years, he is required to take three more courses outside the area of his field of concentration. They can be advanced or upper-level General Education courses or from the departmental programs—the College has thirty-two fields of concentration, or departments.

At this point—or at about the time a freshman arrives—most of the simplicity vanishes. Harvard College is a complex institution—and it is combined with the Graduate School of Arts and Sciences, both served by one faculty. This increases enormously the range given a student, but makes it an Alice in Wonderland institution, too. The catalogue lists at least seven hundred courses, and a wide range of the graduate courses are open to undergraduates. In addition, there are "research" courses, where a student will be working directly under a professor. And there are any number of possibilities for "independent study," in which a student can follow his own leads under a professor. The departments are good-sized institutions in themselves, may have a full phalanx of professors, batteries of research fellows, teaching fellows, instructors, and other junior faculty people, and may have as many as eight hundred concentrators. And here, of course, the mechanics of the institution can seem bewildering. For example, one young professor in history says, and he's only half-joking, "It seems to me that our students get their real educations in finagling their way through our rules for concentrators. They become pretty good lawyers, just from doing that."

Then, too, the sheer variety of facilities is a thing of wonder. Widener, with its 6.5 million books and its 90-odd affiliated libraries, is far and away the largest university library in the world. Harvard has a university radio telescope, a computation center, the Electron Accelerator, the Museum of Comparative Zoology—and an incredible variety of lesser collections, instruments, laboratories, museums, and forests.

To add to its intricacies Harvard uses about every teaching means that there is. There are the basic, large lecture courses, where one professor—known to the *Crimson* and to students as the Great Man—will address 250 students at a time. This, as one observer puts it, works as long as the man is saying something, communicating something that is not in the books. Harvard's emphasis, which stresses research as much as it stresses teaching, is designed to see that the Great Man does have something to say.

Then there are seminars, tutorial programs, plans for independent study, in so many combinations that they would defy little men with organization charts. Basically, "it works," says one Harvard dean, "and it works well, but only because there are dozens and hundreds on this faculty who are teachers, who like to teach, and who are good at it. Anyone who suggests that Harvard's faculty is too interested in research to teach is talking nonsense. The students would disappear if that were true."

Looking at the College's program broadly, there is a series of innovations which promise to open new paths for students.

One, and perhaps the most basic change from the students' view, is the advanced standing program. As the private schools and high schools have raised their targets, more and more students are coming in as sophomores. This is a powerful attraction to students—an innovation that was largely the work of McGeorge Bundy when he was dean of the College and one that he apparently saw would be attractive to bright boys who want to push ahead as fast as they can.

It sometimes involves some sacrifices in the Harvard curriculum—a student may have to drop a General Education course, for example, simply because there is not the time. This, of course, involves a judgment by the faculty.

Advanced standing may be one of the waves of the future. Interestingly enough, President Eliot, about 1906, fought hard to persuade the faculty to make Harvard a three-year college. President Conant, about thirty years later, renewed the battle. The faculty rejected the proposition both times—but there are now more and more students for whom the College will be a three-year program.

Freshman seminars are an innovation—a means of casting back to the closeness of faculty and students when colleges were small. Started in 1960, suggested and financed by Edwin H. Land of Polaroid Corporation and a resident of Cambridge, and instituted again largely by Bundy, these are Harvard's way of bringing student and teacher close together at a critical time, when the youngster is just coming into the College.

"This is tougher than giving two courses," reported one professor, "but I love it." And John Monro, who himself conducted one seminar, reported that, "It was expensive in terms of time. They have a lot of questions, a lot of things they want you to read, a lot of talking to do. But it's maybe one of the best things we've done around here." About three hundred freshmen are enrolled in seminars, working on a tremendous variety of subjects from historical geography to genetics.

Harvard is more and more using tutors. It is attempting to see that more tutoring is done in the houses. The College's departments in the nonscientific fields have used tutors heavily for many years. Now—with the Chemistry Department taking the lead—they are being used in a broader area within the College. In addition, the old tradition had been that tutors went with the honors program—tutors concentrated on the bright upperclassmen working for honors. Now the College is deploying them for other students—say the student who is bright and serious but doesn't want to concentrate his work within one department enough to earn honors there.

Tutoring is an old tradition around Harvard, but for years there has been debate as to how effective it was. Tutors were almost wholly the younger faculty people or graduate students teaching on the side. There is, in the very nature of things, a fairly rapid turnover among these people. There has been a tradition against them in some areas—the promotions might go to the man who researched and published rather than to one who tutored.

Now this is changing. The graduate schools are growing more rapidly than the College, so there are more men available. And Dean John Petersen Elder of the Graduate School has encouraged more graduate students to teach—it gives them experience that many will find valuable when they make their careers in teaching. With more money available, it has been possible to do this.

Finally, there is a growing movement toward independent study. Here a student, an upperclassman—for the faculty insists on keeping sophomores on course work—can get permission to work on his own under a professor's supervision. He may be reading, perhaps doing laboratory work—something akin to the freedom given Junior Fellows by the Society of Fellows.

Harvard College is an ancient, lopsided beehive. Almost six thousand students, when you count in the 'Cliffies. They put their stamp on it. They put Economics 1 in top place in enrollments in the fall of 1961, toppling Humanities 5. Some 640 students signed up for it, 60 more than the year before. The College is a circus with dozens of rings—the departments. It is a political arena with dozens of powerful personalities. It is a fluid institution, changing daily, yet with the crusts of time and scholarship on it.

Educational programs are the things that hit a dean where he lives. John Usher Monro, looking out at the Old Yard from his high-ceilinged office in University Hall, becomes a study in concentration when he thinks of it. An un-Harvardian type, he manages to lie at length and at ease in an ordinary office chair, and still to radiate force . . .

Another Harvard dean, Elder, looks at the other side of Harvard, the Graduate School of Arts and Sciences. Soon after he became dean in the fall of 1955 he sent out a questionnaire to about 1,600 men and women who had taken their doctorates at Harvard in 1950 or later. He was foreseeing great and sharp changes in the graduate schools—and wanted some assessment of the present system.

Surprisingly enough, the doctors seemed content with most of the formal requirements for a degree. Requirements are a thickset growth now, adding up generally to four years or more in the natural sciences, often longer in the humanities—for many, six years or more.

On two key aspects of a candidate's work—the final oral examination and the book-length thesis—Elder found real grounds for criticism. Enough of the doctors had suggestions for modifying the oral examination, or abolishing it altogether, to lead the dean to ask why it should be kept in the pattern at all. It was adopted from Europe—but that is no reason why departments should not ask themselves why it is kept.

Elder found considerable waste in doing theses—waste because students did not get enough advice on choosing subjects, waste because they set aside intellectual discrimination and literary taste in their writing, producing something that was neither an article nor a book. Most theses today simply go into the file; perhaps not one in a thousand is published as a book —although the fruit of the research may show up ten years later in the form of a book.

In other areas—the amount of practice graduate students get in teaching, the language requirements, the frequent delays in getting a degree (more than 20 per cent of those in humanities took more than ten years)—the dean found points at which the programs might be improved.

Five years later, with the Graduate School's enrollment up from about 1,500 to 2,300, the school has made headway. It has raised the pay of Teaching Fellows three times, cut the number of hours each gives to teaching—so that the program is attracting better men. It is underwriting get-togethers, where seniors and juniors meet over tea, sherry or bourbon once or twice a month—so again Teaching Fellows will be closer to the older men. It has probably even made headway with theses—students are sharp and shrewd and they are putting on pressure to allow shorter theses.

New problems keep creeping up—the Graduate School now administers about $3.6 million in financial aid for its students each year. Perhaps two thirds of them get some form of aid; about half of it comes from outside sources—foundations, grants, or gifts that are not so easy to control as are Harvard scholarships. One result: "We may have a boy here getting seven or eight thousand dollars sitting alongside another getting twelve hundred from Harvard." Housing is a problem, and the university has plans for a $10 million housing project for graduate students, their wives and children. Research projects are a problem: "A professor gets money for some research project and he hires five students to help him. All of a sudden, we have five dissertations in that area."

Elder, quiet, white-haired, a classical scholar with the incisive manner of a businessman, leans back. His office is in what was the second-floor bedroom of a Victorian house on Broadway. He focuses his eyes on a point on the ceiling . . .

Enormously complex institutions. Any dean, in Harvard or elsewhere, will testify that an administrator bucking just one of the old, established departments, English, or Economics, or Romance Languages, or any of the others, is in for a long drawn-out fight.

And the product cannot be measured. Even in the areas that can be measured there is room for lots of debate. "Is *apparent* ability translated into *actual* ability?" Or, "Franklin Delano Roosevelt was no scholar, you know. But he scored top marks in the competition of life. And we should be preparing boys for life." In this conception of education the *New York Times* may be as important as any number of courses.

This debate, clearly, leads to a pathless jungle. But in a historical pattern education makes sense. Look back at what has happened to a Harvard education over the centuries.

Let's go back for a moment.

When Henry Dunster, thirty years old and a graduate of

Cambridge, was engaged as president of Harvard College, in 1640, he set up a three-year program in the Liberal Arts, the Three Philosophies, and the Learned Tongues. His freshman class was a total of four. It was a real college in the English sense: teachers and students living in the same building, associating in lecture rooms, at meals, in chambers, at prayers. As Morison points out, the life and the studies would be difficult for any student today to grasp.

But it worked. This was education only a step from the medieval. But it produced the theologians, the merchants, and the administrators that Britain and her colonies needed. It produced the men who produced *Hamlet,* the King James Version of the Bible, and the Mayflower Compact.

A hundred years later, as Morison records it, the life and studies had changed greatly. The most essential reform of Holyoke's administration "was doing away with the ancient system of each tutor's taking a class through all the subjects in the curriculum. The four tutors became specialists in January, 1767; to one was assigned all instruction in Latin; to another, Greek; to a third, Logic, Metaphysics, and Ethics; to a fourth, Natural Philosophy, Mathematics, Geography, and Astronomy; and all four taught Rhetoric, Elocution, and English Composition, in accordance with the excellent principle that everyone should teach English, no matter what other subject he taught." The College had changed immensely, shaken off much of its religious baggage, acquired its first scientist in John Winthrop, and had acquired telescopes and other apparatus for teaching the natural sciences.

The education had changed. It was perhaps markedly different from the curriculum at William and Mary, where Thomas Jefferson got what formal education he received. Again, though, it worked. America had produced the Founding Fathers—Washington, Jefferson, Franklin, John Adams, Hamilton, and a dozen others. It was a phenomenon of history that the United States, a country with less than three million whites, with little of the culture and few of the comforts of Europe, had produced these leaders beyond compare. Among those who signed the Declaration of Independence were eight Harvard men.

A century later, under Josiah Quincy, Harvard and its education were again changing. "As early as 1838-39 it was adopted in principle that students might abandon Latin, Greek, or mathematics after freshman year, in favor of History, Natural History, Chemistry, Geology, Geography, Astronomy, Modern Languages, or Modern Oriental Literature; but the task of providing instruction in all these subjects was too much for the Governing Boards." This is how Morison recorded the change. Nevertheless, this period produced some of Harvard's most illustrious names: Richard Henry Dana, Thoreau, Emerson. And Boston, building up on the China trade, and the country as a whole were in a fervor of expansion.

There were still great changes to come: Eliot and the free-elective system (under which, legend has it, one student went through his four years taking nothing but Sanskrit). Then Lowell with the concentration-and-distribution, and Conant, whose broad changes in appointments and in admissions procedure may have changed the College as basically as the policies of any president.

In all of this, slice the history at any point that you may choose, a Harvard education has worked well: it has produced leaders for the nation, leaders in scholarship and science. The changing forces running through the society have played on the College, the College in its turn has had its impact on the world about it. Harvard with its Governing Boards drawn from outside the institution—largely from Boston lawyers and businessmen on the Corporation, from alumni on the Overseers—and with its policy of bringing in great scholars and scientists wherever it might find them, has been very sensitive to the winds of change on the North American continent.

Clearly, a Harvard education is a hard thing to define, clearly it is an ever-changing thing.

The directions in which it is going now are perhaps most clearly shown in the innovations in the College: the freshman seminars, the emphasis on tutoring, the growing use of independent study. Similar forces are at work in the Graduate School of Arts and Sciences and in the other graduate schools. The Centers, springing up in great numbers, are perhaps the most striking innovation of all.

But through these run two trends which are in some sense a return to the Harvard education of earlier days:

• • • A drive to bring teacher and student closer together, an attempt to return to the intimacy of the time when the College was small and the graduate schools in their early days.

• • • A freeing of the student from the rigidities of courses, programs, and degree requirements—an attempt through periods of independent study—to give him more of the easy freedom he might have had in Eliot's day. Harvard has always maintained a large measure of this—particularly in such things as the reading period, when for two weeks before examinations courses are suspended and students are free to read on their own schedule. It has had the Society of Fellows, which gives a small group more freedom than Eliot would have dreamed. Now independent study promises to extend this to much larger groups.

There is, too, through all these shifts one basic that has been a polar star at Harvard. It is simply to demand excellence in men—to bring good men to Harvard, to give them freedom, to hold them to high standards of performance. This, in part, brings the happy accident of a Nobel Prize winner. Much more broadly, it brings a group of superior men who, above all, care for Harvard. That focus on men, and men who care for what they do, may be the single most meaningful key to what a Harvard education is.

It defies summing up in a phrase or sentence, just as do the myths and mysteries of men. But its spirit can be caught. And it was perhaps best caught in the inaugural ceremonies for Eliot in 1869. They ended with words from Sophocles:

> What a thing is man! Among all the wonders
> The wonder of the world is man himself.

12

THE MERGER

RADCLIFFE has been merging with Harvard for most of its history—and the union is not yet complete.

Founded in 1882 as the Society for the Collegiate Instruction of Women, Radcliffe has always been something of an anomaly, reflecting the rapidly changing and still not clear position of women in American life. Radcliffe, though, is rapidly establishing its position, and undoubtedly will settle into something approaching a fixed orbit in the ever-changing university long before the sociologists have stopped worrying about the role of women in society.

It was said years ago that Harvard is not coeducational in any respect except in point of fact; but the fact was established only after a long battle, and the fiction that Harvard is not coeducational lives on.

Harvard was 240 years old when the idea of a women's college in Cambridge was born. So the university's sense of permanence was no new thing. The idea came, as it is recorded by David McCord in his graceful history of Radcliffe, in the autumn or winter of 1876. It came in discussion between Arthur Gilman, a historian, literary figure about Cambridge, and director of the Cambridge School of Girls, and his wife Stella.

But it was openly proposed. A woman showed the way. A Miss Abby Leach persuaded three Harvard professors to give her private instruction in Greek, Latin, and English. It had been demonstrated years before that women were capable of college work (Mount Holyoke had been founded in 1837), but it was Miss Leach who persuaded three Harvard professors that a young woman was as capable of advanced study as were the young men in their classes.

In 1878 Gilman laid his plan before a group of Harvard professors, who received it with warmth. He put it before President Eliot, and was told there was no objection to his going ahead. He formed a committee of ladies, "taking pains to choose such as did not represent any 'cause,' or who would be looked upon as 'advanced,' or in favor of coeducation."

The plan most simply was to "give private tuition to properly qualified young women who desire to pursue advanced studies in Cambridge. . . . No instruction will be provided of a lower grade than that given in Harvard College." The hope was to provide this instruction for as little as $250 a year. The whole scheme was most carefully handled to be sure that everyone understood that it did not tend to coeducation and that Harvard was in no way responsible for it. It succeeded. Thirty-eight Harvard professors offered courses, and in September of 1879 twenty-seven young ladies began their college studies in rented rooms at 6 Appian Way, close to but suitably removed from Harvard Yard.

The moving spirit among the Cambridge ladies was Elizabeth Cary Agassiz, wife of the famous Harvard naturalist. In 1881 she went to interview President Eliot on the use of books from the Harvard Library and on "the feelings about our future."

At that time the women's school had no name and could have had little but questions as to its future. It was named the Society for the Collegiate Instruction for Women in April, 1882, and immediately nicknamed the Harvard Annex. Mrs. Agassiz's feelings about the whole thing were probably best summed up in a statement made years later. As given by William Bentinck-Smith, it was: "We began the Annex as an experiment. We did it in the hope that Harvard would finally take us in some way under her protection."

The school grew, established its own corporation, obtained forty to fifty students a year, and built up an endowment of $70,000 and a library of 800 books by 1884.

Ten years later the Harvard Corporation received the proposal that the Society be incorporated as Radcliffe College and be dependent on Harvard for instruction, examinations, and degrees. The name Radcliffe was the maiden name of Lady Mowlson, who had given Harvard £100 in 1643 for a scholarship. The Corporation accepted, the Massachusetts legislature passed the bill of charter, and Radcliffe was formally established. There was but one reservation, which was designed to bar any taint of feminism at Harvard. The Corporation voted that "no Harvard A.B. be given to women." Radcliffe girls were to get Radcliffe degrees.

And Radcliffe had bars of its own, designed to be sure that its students maintained their position of proper young ladies. They did not enter the College Yard or go into Harvard Square. There was little or no coordination of the work of Radcliffe and Harvard, professors came to the Radcliffe classrooms to give their lectures entirely on their own, and the students in the two colleges apparently saw little or nothing of each other.

Eliot, though, was an enthusiast for the education of women. Early in his career he had recorded disappointment because the graduate schools refused to accept women. Eliot supported Radcliffe throughout his career and made strong pleas for gifts to the institution. But he clearly saw the two as quite separate institutions.

It was in fact not until 1943 that the big break-through came. Harvard had largely been turned over to military purposes and the shortage of manpower in the faculty was acute. President James Bryant Conant disliked the situation in which Radcliffe called on Harvard professors on a purely personal and extracurricular basis for its instruction. Besides, there simply weren't men enough to teach all the classes. Paul Buck, provost under Conant, engineered the introduction of Radcliffe women into Harvard classes. No longer were there separate classes in Radcliffe classrooms; the girls had arrived.

The revolution was accomplished slowly, but smoothly. Within a few years Radcliffe girls were in all Harvard classrooms; Harvard boys were going over to Radcliffe for dates. The change was both organizational and social. More than one professor or master of a Harvard house has remarked that joint instruction had consequences that were pleasant but unexpected. "There was," said one, "an amazing improvement in the pulchritude of Radcliffe girls."

The movement grew in the postwar years, a steady forward thrust for young ladies in tweedy skirts or blue jeans. More and more student activities—clubs, plays, the *Crimson*—became joint activities. Radcliffe girls walking or on bikes brightened the Square and the Yard. With more and more graduate students, and even undergraduates, marrying, the parade of young women with strollers became a familiar sight in the Yard.

The change in marital habits was pervasive. Bentinck-Smith quotes President Wilbur K. Jordan of Radcliffe as saying in 1952: "A study of several classes that graduated from Radcliffe College from 1900 to 1905 shows that only 52 per cent of the members ever married." But these determined spinster-types have long since departed. Today "Radcliffe graduates with an almost dull uniformity marry quite young men who typically have just graduated from Harvard."

And undergraduates, male and female, make much more of a life together. It is rare that house dining rooms do not have feminine guests. Rather than "dating," Harvard boys and Radcliffe girls much more commonly study together, call each other on the phone right after breakfast, go to class together, eat together. "It's a wonderful relationship," one Radcliffe girl said. "It has all the advantages of matrimony—almost."

Barriers are coming down. In the fall of 1961 came the movement to merge the Harvard and Radcliffe doctorate programs in Arts and Sciences. This seemed like finally cracking the oldest barrier of all.

As the *Crimson* reported it, "A merger would mean that the 27-year-old Radcliffe Graduate School of Arts and Sciences, with a current enrollment of 503 women, would be abolished and that the undergraduate school would remain the only Harvard bastion against official coeducation."

From the viewpoint of the girls, the meaning was that they would get a Harvard degree. They would get the same degree as their sisters who happened to enroll in Harvard's graduate school. And the girls in the undergraduate school saw themselves as only one step removed from getting a Harvard degree instead of a Radcliffe degree, signed by the president of Harvard and bearing the Harvard seal.

In short, in the fall of 1961 it seemed that the merger might soon be complete, that Harvard would be coeducational in theory as well as in practice. A girl at Harvard would get the same opportunities, live much the same life, get the same degree as a boy. But would she?

Two questions remain:

One may work out. Radcliffe girls think of themselves as an underprivileged lot compared to the boys.

The second is basic, a rock breaker of a question. The way it is put by some of the older men at Harvard is this: "A Harvard education is a rare thing, costing considerably more than we can charge a boy for it—and it should be reserved for those who will use it. So why give this education to the girls—most of whom will marry as soon as they leave the place and never use their educations?"

There is no question as to Radcliffe's eminence. It is not the oldest nor the largest of the women's colleges. The quiet group of colonial and Georgian buildings across from Cambridge Common, a quarter mile from the Harvard Yard and the residential quadrangle, a half dozen blocks farther out, house one of the country's great educational institutions. Radcliffe may be the most prestigious of the women's colleges; it certainly is a pace setter for Harvard. Because it is small, its admissions standards have been higher than Harvard's. The performance of its students, as many Harvard professors recognize, is as good or better than the boys'. Its graduate school has a unique place. In the words of David McCord, "No other American college for women maintains a graduate school in size or importance approaching hers."

But Radcliffe girls live quite differently from boys. They live in dormitories—pleasant buildings, akin to those at dozens of other girls' schools, but a far cry from the opulence of Harvard's houses. The girls are crowded, they clean their own rooms, take turns serving at table and answering the telephone. They have house mothers running the dormitories, rather than the Harvard house system of a master—often a full professor and certainly a man with the stature of a professor—and tutors living in residence.

The differences in atmosphere are even greater than the difference in facilities would suggest. Boys living in the houses frequently say that the most exciting part of their education is the conversation in their dining halls. Dinner can be a leisurely affair; students, tutors, the master, guests get going in talk that can run for hours. Radcliffe girls line up before the bell rings, rush in, and eat with the precision and speed of squirrels. "We sit there afterwards and tap our feet waiting for the house mother to finish so that we can get out." The conversation seems to be largely missing. Guests, as a long line of Harvard professors have testified, are gun-shy. They usually get a sharp grilling on their field or sometimes find themselves simply taken aback because they are the only males in a field of bright female faces.

The girls, too, live under much heavier restrictions. Boys in the houses have only a couple of rules that they feel they must live by: never to take a book from Widener unless it is checked out and never to plagiarize. Otherwise they have almost complete freedom; they can, for example, take off for a couple of days or a couple of weeks in New York without anyone's checking up on them. Radcliffe girls, in contrast, have to sign out if they go out after ten in the evening, and they always have to be in by one in the morning unless they have special permission. They have so little privacy that the standard complaint is they need a "place to cry."

The larger problem is really the problem of women in this society—rather, a complex of problems which, in turn, are reflected with peculiar force in the women's colleges. Women have been the second-class citizens in Western society. It is not strange that women's colleges did not get going until the latter half of the 1800's; women did not get the vote until 1918. It is not strange that there are many fewer places for girls in the colleges; the proposition that it was a good thing to given women higher education was not accepted completely until recently.

It is not considered strange that Radcliffe and Harvard are so unequally blessed with endowment. Radcliffe's total endowment in 1961 was about $16 million. Harvard, as of the first of July in 1961, showed an indicated market value of its general investment securities of $717 million. (Much of this benefited Radcliffe—to the degree that the income from it was used to further educational facilities.)

From the college girl's viewpoint, it is still a man's world. The girls compete successfully with the boys in high school, win their share of scholarships, probably outdo the boys in college, and increasingly go on to graduate school (more than a third of Radcliffe graduates do go on). But when the schooling stops, their lives diverge dramatically. The boy goes on to a career, the girl stays home with her babies.

Educators, psychologists, wives, and husbands—almost anyone who looks at the problem—agree that the girl's education equips her for her life much less well than the boy's does for his. And it has long been recognized that there might be a better form of education for girls. But four years of college work in the art of using pots and pans clearly is not it. And no one yet has a clear prescription for what a girl's education should be.

The problems in this whole area of women's lives and women's education seem legion. The quip is: "They're neurotic because they're not married; or they're neurotic because they are married." The number of sociologists, amateur and professional, seeking answers also is legion.

But, from the viewpoint of those who have to give the education, the hard fact is this: The chances are long that the girl graduate will not use her education—she will not base her life on it as the boys do. So why give it to her in the first place? Or, at least, why give her a Harvard education? There are plenty of good schools to which she can go.

The burden of these questions falls most directly on one person—Mrs. Mary I. Bunting, president of Radcliffe. Polly Bunting came to Radcliffe in 1960, forty-nine years old, a microbiologist, mother of four—and most importantly a woman with a bright eye and a quick smile, a direct approach and plenty of resilience.

She began immediately to change the somewhat sleepy climate at Radcliffe, and she caught the nation's eye with her plans for women's education. Within months Mrs. Bunting was one of the United States' best-known women, and one of the best-known of Harvard people. Her answers to women's troubles started little fires where they had been smoldering concern.

Mrs. Bunting moved on several fronts. She discovered "the climate of unexpectation," which she believes has inhibited women's education nationally as well as at Radcliffe. She explained, "I have a little the feeling of the freshman that the students are just as brilliant and interesting as I thought they would be. Radcliffe girls are not as apathetic as I had been told they were—but they are less self-confident about many things they are perfectly capable of doing." One result of this was that Mrs. Bunting established a student committee to meet with her weekly and discuss college policy problems.

More generally, the atmosphere throughout Radcliffe brightened markedly within the year.

She tackled the problem of physical facilities. Radcliffe had grown haphazardly, as colleges do. No one had ever wondered whether having the residence quadrangle a half mile from the Yard was the best arrangement. No one had ever seriously questioned the disparity between Radcliffe's housing and Harvard's. Mrs. Bunting enlisted the college architect, Nelson Aldrich, to draw up a long-range plan. She put her own trustees on a bus and took them for a tour of Harvard's new Quincy House, with its sculptured panels, broad halls, and airy rooms. And finally she announced a plan for reorganizing nine of Radcliffe's dormitories into three houses, which might in time be given dining rooms like those in the Harvard houses and might house faculty members and their families, to give the Radcliffe girls the equivalent of what Harvard boys get from tutors living in their houses.

The most dramatic thing she did—and the thing that stirred educators and women everywhere—was to set up her own Institute for Independent Study.

"The explosion of knowledge has led to an educational revolution for men as well as women," she explained. "Education has to be a continuing part of adult life in a new way. Women might as well initiate the change."

The idea was simple: to give women who were, say, ten years out of college or graduate school a chance to come back for a year's work at Harvard, a refresher course, a renewal of scholarship.

In September, 1961, the scholars reported, twenty-one of them, including eight Ph.D.'s, seven with masters' degrees, four who had done graduate work but got no degrees, and one who had done no college work at all. They were from diverse backgrounds: a dental surgeon from New Zealand, a distinguished theologian, a chemist turned archaeologist. The works they wanted to pursue were at least as diverse. Mrs. Elizabeth Barker, mother of three, came to study the use of beasts as a model and critic of man in English literature from the late sixteenth to the early eighteenth century. Mrs. Carol M. Crosswell, a practicing attorney, came to write a book dealing with the techniques and problems of doing business abroad. Mrs. Maxine Kumin, a poet who has published several volumes of children's verse, intended to write serious poetry. Doing it at home, in the middle of a lively household, she compared to working "in the eye of a hurricane." Barbara Swan, who teaches and paints while caring for two small children, planned to prepare for her third one-man show.

It would be a year, perhaps several years, before Radcliffe could know how well the Institute will work or how well it can fulfill the needs of career women. But few experiments done in the universities had so caught the imaginations of literate Americans at the time it opened.

"We can't solve all the problems of suburbia," says Mrs. Bunting. "But this may help a small group of women, and it may serve as a pattern for other creative women."

How long will it be before Radcliffe has a true union—full equality—with Harvard?

"Fifteen years," says one veteran Radcliffe administrator, simply from her knowledge of the pace at which Harvard's administrative mills grind. But the answer is not so simple, wound up as it is with the evolving position of women in the society. History is on the girls' side—Radcliffe has come a long way in its eighty years. Performance is on their side—two thirds of the Radcliffe girls graduate with honors compared to slightly more than half the Harvard boys. The pressure of society is on their side—women's lives are becoming more and more like men's, and women make up more than one third of the U.S. labor force. More and more women are taking time out to have children and then going back to work.

The strategy inherent in numbers is on the women's side. Harvard, at the start of the 1961 school year, had 11,401 males and only 2,163 women, of whom 1,641 were in Radcliffe or its graduate school, the others in Harvard schools. In the college population generally there are roughly two men for each girl. If Radcliffe should begin to campaign for its "fair share" of places, Harvard might be under heavy pressure.

The girls, too, lend something more than tone to Harvard. There are professors who swear that they do not want to teach classes that are exclusively male. Others find it easier to teach the women: "It's as easy to teach four girls as it is three men in terms of the demands they make on you, the time they take up. They're brighter." Professors seem to feel that the girls set a higher average, are easier to teach. But the truly brilliant students—"the ones whose coattails you grab onto because they take off like rockets"—come from among the boys.

More broadly, the girls are a civilizing factor—although the importance of that factor is hard to weigh. As one graduate student put it, the College, the houses, and the graduate schools make up disparate communities, almost isolated from each other. It is easy to get lost within any one of them. Radcliffe's socializing makes it possible for a student or an instructor to make friends in the other schools. In a sense, the girls make Harvard one world.

Radcliffe, too, has its own independence to consider. One of the climactic moments of merger will come when the first Radcliffe girl receives a Harvard A.B. But, like a bride who must take a new name, there will be people around Radcliffe who will want to retain the name.

In the end, the shape that Radcliffe finally takes will be influenced by all the pressures of society. But the decision will be made by the Harvard Corporation. And, as one veteran close to that group says, "Harvard is an autocracy. It can resist a long time."

13

HIGHER AND HIGHER EDUCATION

> Whatever is worth doing is worth doing well.
> —OLD CARIBBEAN PROVERB.

ONE DAY in the spring of 1961 this little notice appeared on the third-floor blackboard of an ivied brick and stone museum tucked away at the end of a finger of a street running off Kirkland Street in Cambridge. It is an old Yankee aphorism, which Harvard has made peculiarly its own, and which needed no twisting at all to be a most Harvardian comment on the work of John Fitzgerald Kennedy and his advisers, some of them Harvard's own. It appeared the day that it became apparent that the United States had a fiasco of a Cuban adventure on its hands in the Bay of Pigs.

The museum now houses the Harvard Center for International Affairs. The center is, among other things, home base for a handful of the new group of U.S. military intellectuals whose studies help shape U.S. military and arms control policies and whose work and faces have become known to millions of Americans through papers, articles, books, and television. The center also represents a new phenomenon in American education and one that has grown tremendously since World War II. For example, there are at least seventeen university centers for Russian studies.

Harvard has a dozen or more centers—among them Russian Research, Middle Eastern Studies, Far Eastern Studies, the Study of History and the Study of Liberty, Cognitive Studies, Research in Personality, World Religions. It has a center for Urban Studies, and the Cambridge Electron Accelerator, both joint projects with M.I.T. It has proposals brewing for a series of others—a Latin-American center, a center for Multinational Business at the Business School.

Harvard has not quite figured out where all these belong in its universe, or where they are likely to go in the future. But the fact that so many are in place and that the idea has been so widely taken up at other universities indicates a tidal force moving in the world of education.

The idea of the centers goes back to World War II, when Edward S. Mason, an economist and a professor, and others from Harvard and other universities were working in the State Department and the Office of Strategic Services. The two agencies put teams of scholars to work on regional studies—problems of the Middle East, for example. The only way that it made sense to look at a region was through the combined efforts of historians, linguists, economists, sociologists—a team that cut across all the established lines of science and scholarship.

Wartime experience led directly to the setting up at Harvard of the Russian Research Center—a field where the university saw the need of a massive effort, though it might not be a continuing one. The center was an enormous success, at one time had between forty and fifty professionals working in it. At the same time, the foundations and the government agencies recognized the center as a means of tackling national problems, such as the underdeveloped countries or defense policy, and they channeled money and people into them. The idea spread—to history, science, any number of areas. "If anyone around here counted up all the centers we have," says one director of a Harvard center, "they'd want to abolish them simply because they're so disorderly—they don't fit into the neat, orderly world of a university."

But for the university the idea of the center has two great advantages. It provides the higher and higher education—work beyond the postdoctoral level—that is increasingly in demand. And it does provide a research tool, a center to bring together experts from a dozen fields, that can tackle the sticky problems of a broad look at history or the development of Uganda.

What does go on in these centers? Let us go back to the Center for International Affairs. It is a small affair, contained in three floors of the old Semitic Museum building with a budget of about $320,000, most of which is what Harvard calls "soft money"—grants and gifts, the bulk of which came from the Ford Foundation, Rockefeller Foundation, and National Science Foundation. The Center has its own endowment, which supports its key people. Harvard provided $25,000 from the Faculty of Arts and Sciences and the building and maintenance. This is the pattern of financing for the centers generally.

The center is built around a nucleus of five members of the Harvard faculty: Its chairman, Robert R. Bowie, is Clarence Dillon professor of international affairs. Its military specialists are Henry A. Kissinger, professor of government, and Thomas C. Schelling, professor of economics. Mason, who saw the idea of the centers originate in government, now holds one of Harvard's famed university professorships and heads the center's work on development. A fifth member, Alex Inkeles of the Department of Social Relations, is heading research in the interlocking of social, cultural, and economic forces in developing countries.

The center has fifteen Fellows—professionals from the U.S. military services, civilian agencies dealing with foreign policy, and foreign service officers from countries abroad. They come to the center for a year's academic work—a chance to write a book, research the problems they work on, catch up generally on their fields.

And it has twenty-three research associates—scholars and researchers whose interests coincide with the center's—who do much of the field work and study in the ramified research programs. The staff adds in another dozen—including an administrative officer, an editor, and a librarian. Visiting professors, businessmen sitting in on seminars hoping for light on their own problems—there are still no more than a few dozen people involved in the center.

And the scope of interests is enormous.

The center is primarily for research, not teaching. Even so, the bite is big. Let us take a look at the three prime concerns.

Military strategy and arms control policy—"Defense is too important to leave to the generals." Schelling and Kissinger both published books in 1961. Schelling's *Strategy and Arms Control* was done with Morton H. Halperin, a research associate. Kissinger's *The Necessity for Choice* came right into the middle of a developing national debate on use of nuclear weapons. Both professors "commute" to Washington, both are on the lecture, conference, and seminar circuit, both defend their views on one of the greatest dilemmas of our times. Kissinger in October, 1961, found himself on a national television program debating with Paul Tillich, one of Harvard's great philosophers, the question of whether the United States would ever be justified in using the atom bomb before the enemy used it. Tillich, pondering the ethical position, said never. Kissinger, thinking of Europe's vulnerability to a Russian offensive, maintained that we might be forced to.

Europe is the center's new interest—a Europe rapidly making itself over in the Common Market, rising again to be a major force in the world.

And the third, and perhaps the oldest, of the center's interests is in economic development, centering largely on Africa's problems.

All the faculty people lead seminars in these areas: Kissinger and Schelling on military-economic problems; Bowie, one on France and another on research in political, social, and cultural factors; and Mason, the economic development seminar.

In addition—in the 1960-61 academic year—each of the four did some teaching. Together they were consulting at the White House, the Departments of State and Defense, and the disarmament agency. They participated in conferences on world security and disarmament in the United States and in Russia, in meetings at Oxford, in American Assembly sessions, and in other conferences here and abroad. They lectured at many institutions—among them the California Institute of Technology, the war colleges of the U.S. defense services, the Institute for Defense Analysis, the Operations Research Society of America, the Rand Corporation, and the Foreign Service Institute. Mason, serving as head of an International

Bank team, spent the fall and early winter in Uganda. Bowie traveled widely in Nigeria.

These are the high points in the lives of four professors in one year. It makes part of the record of one small center. It is a dramatic illustration of how the role of the professor has changed in twenty years. And it is what gives rise to a whole new order of wit in faculty clubs—a man's place in the pecking order now depends on how many miles he racks up in jets in a year.

But this is only one side of what goes on in the Center for International Affairs. Much of the rest is simply grubby work, for most people at the center are working independently. Those with common interests meet in seminars.

Let us look in at one, on a brilliant October afternoon. There is somewhat of a rush for seats, for the room is not big and there will be more than the twenty who can be accommodated around the long table. The mood cannot be summed up in one aphorism, but one that was posted at the center not too long ago may come close: It was from J. M. Keynes: "Madmen in authority who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back..." Keynes was probably thinking of Mussolini and Hitler. The rulers of a dozen nations may at some time be influenced by what goes on in this room with its lean, modern furniture.

Two men share the end of the table. Mason, whose eight years as head of the Harvard advisory projects in Pakistan and in Iran make him the dean of consultants in economic development; Montie Yudelman, a young South African agricultural economist, who leads off...

The problem is to move the African from subsistence farming to producing for the market... central in all development, for an African family now produces enough to feed only itself and no more than half of another family . . . practically no statistics on what is produced . . . the African knows no writing, no counting . . . the land is held by the tribe, communally . . . the chief simply parcels it out to each man to raise what he needs . . . little or no equipment, no investment in the land in fertilizer or drainage . . .

Around the room are about twenty-five men and one woman. Average age, perhaps thirty. A sprinkling of Africans, perhaps five of them, and Asians. Researchers, students who will become teachers, foreign service people who will have to grapple with these problems when they go back to India or Africa, a visiting professor or two, representatives of companies or consultants with interests in the area. Judging from their comments, perhaps half of these people have had experience in advising governments, persuading farmers to have their cattle dipped against disease, trying to persuade chiefs to invest in farm machinery. The talk, though, is general—a hunt for the best ways to persuade the African to produce more.

• • • Suppose you convert the communal lands to private land—encourage the profit-making idea, encourage investment in the land and in equipment. One problem: When you do parcel out the land to private owners you have to give them land enough for an economic farm, and that displaces half the people now on the land. They become refugees in the cities, lost in a world where there's no place for them, no work.

• • • But can you get economic development without private ownership of land? asks Mason. Will people invest in land they do not own? How could they get equipment unless they could use their land as collateral for mortgages? . . . And how, asks someone in the back of the room, can you keep them from drifting into the cities unless you give them land? . . .

• • • You break up their way of life, the tribe, the old loyalties, the whole organization of their worlds, if you parcel out the land . . .

• • • What about better incentives? asks Yudelman. You have got to get them on a cash economy, put into the stores things that they want . . .

• • • Should you have marketing boards that keep down the prices they pay the farmers, drain off some capital to build roads and schools? Tax the farmers, in effect. . . . The question, says Mason, is whether you let development go on the traditional pattern, give the farmers all the income they earn and hope that roads and schools will flow automatically out of this, or should you tax away part of that income directly to build the facilities the community needs?

• • • I think we should keep the communal system, let the tribes go on as they have, and try to work with the chiefs to raise productivity . . .

• • • It has worked in my country . . .

• • • Maybe the best of all devices is to put in a land tax. It is equally distributed—it puts the same burden on all farmers, whether they raise high-value crops or low . . . It puts the farmer on a cash basis right away. He has got to earn the cash to pay the tax or he loses the land. The only difficulty with it, concludes a young American, is that it is a real problem to collect those taxes. . . . The laugh around the table is general.

• • • And what do you do about the cows? The African now keeps cattle as a prestige symbol. He can buy wives with them, sure, but the real thing is just to have a lot of cattle. It doesn't matter what quality they are, he never intends to sell them. The more he has the bigger man he is . . .

• • • How can you ever put prestige on a cash basis? asks a young researcher, and a voice from the end of the table chimes in . . . One of the uses of cash is to pay taxes.

The seminar rolls on. Ideas coming by free association, large ideas, ideas that are easy to talk of here but that in Africa would meet the full array of tradition, incompetence of officials, inertia. The meeting breaks up and two young Americans climb the stairs to the third-floor library and lounge.

"It is something like playing God," says one. "Think of it —millions of people in a vast area and some one has to decide whether or not to give them the idea of ownership."

"Yes," said the other. "I wonder. I've never seen Africa. But I wonder if the Africans wouldn't be better off if they were left alone to find their own answers . . ."

The two walk up a half flight of stairs and then turn to each other again.

"They come to us wanting shirts and penicillin and toy typewriters and mining machinery . . ."

"And we load them down with work and taxes and worry and mortgages . . ."

"It does give you an uncomfortable feeling of playing God . . ."

Two heads shake together and one man made the break-up-the-meeting remark.

"Fun to think about, though."

And the other said, "I've got to get out to East Africa and see it for myself."

This is all in the center's way of doing things. It was set up in the late 1950's by the university, out of a groping feeling that Harvard should be doing more in international affairs, should have some means of tackling broad problems in international affairs. Bowie, then head of the State Department's policy planning, was brought to Cambridge to set up the center. He spent a year planning and organizing, opened it for operations in the fall of 1958.

His basic philosophy is summed up in two points: "Groupthink doesn't produce results of the quality we want. We can't stake out an area and hire people to do parts of a research job for us. In the end, on any major problem, one brain has to digest the material, stand behind the conclusions." But alongside this idea is another: "These problems are too big—they involve too many fields, too many possible approaches—for one unaided brain."

The distillation: Set out broad areas—defense, development, Europe. Find good people, first-class people who already have a bent toward these areas. Let them work alone, in their own way, on their own problems. But put them together in one place, working together in seminars, sparking each other.

This is one approach, but it has much in common with the other Harvard centers. At the Electron Accelerator physicists work in big teams, with a huge piece of machinery, exploring the slowly opening world of the tiniest particles within an atom.

At the Center for Cognitive Studies, Jerome Bruner and his associates work in an old home that once belonged to President Eliot. Their equipment is simple: apparatus that is knocked together in a shop in the basement. Their field is tremendous: exploring the ways that people learn, know, and think. They hope to find a new theory of instruction. They ponder over a child's way of thinking, which seems both more direct and more complicated than an adult's. A child easily grasps the concept of squaring a number and yet he boggles at an adult's way of describing it. He does not want to write X^2 but X with a little square in place of the ^{2}.

Yet the centers have much in common. They tend to be loosely but firmly tied to the university departments—their senior people teach in the departments, much of their support comes from the departments. But they are independent; no one in the university tries to direct them, much of their financing, perhaps all of it, may come from government or grants.

This is a half-world and, as much of Harvard does, it defies the conventional organizational approach. Moreover, even within the university, the centers are not wholly accepted.

They were originally conceived on something of a crash-program basis. "We badly needed to learn a lot about Russia fast. We couldn't see that it could be done within the existing structure—the job called for bringing together specialties of all sorts. The center seemed the ideal way to mobilize a team."

But the idea has spread and has demonstrated its vitality. It is also becoming apparent that the problems the centers were set up to study are going to be around for a long time. "We are going to have international affairs as long as we have a United States. And it's clear that the problems—what Nigeria will do about education, for example—aren't going to be solved in the course of a three-year grant."

Harvard is not yet ready to say which way the centers will go—whether they will be folded more tightly into the university structure and supported more directly with university funds or whether they may go on as independent little institutions. Indeed, some of them may fade away as the need for them passes.

There will be no simple answer. A whole complex of forces is at play—the willingness of government or foundations to finance them, the caliber of the people who man and use them, the changing nature of the problems the centers work upon. "We are a long way," says the director of one center, "from the time when you could say that a center was simply a professor with a grant. These are complex operations, difficult to administer."

But the tides of history seem to be flowing the center's way. The United States is demanding a higher and higher level of education and research, and more people trained in the skills the centers can develop. Uganda and dozens of other nations have development problems that are tremendously complex and do not solve themselves in three years. And the very explosion of knowledge opens up new areas of the unknown, new problems for researchers.

More and more, the centers appear to be here to stay.

14

A THING APART

THE Harvard Business School is a thing apart.

It is apart in an academic sense. A dean of the Business School said recently: "If you consider that there is a gap between the academic world and the business world, we are about three quarters of the way across that gap—on the side nearest the business world."

It is apart physically. The school's Georgian buildings are on the south side of the Charles, across the Larz Anderson bridge from Cambridge. Most of them were built at one time —1926—with a $5 million gift from George Fisher Baker, then president of the First National Bank of New York. The buildings added later—the Kresge dining hall and the Aldrich classroom building—are in the same Georgian style, so that the whole group is alike in appearance. There is none of the fine conglomerating of three centuries of architecture that the College has.

And the school is apart in that undefinable thing called tone. Its students are older—men coming into the two-year graduate program average twenty-four, most have their military experience behind them, most have worked at least one year full time in business. They dress more formally than other groups of students. They vote Republican, where other schools have a slight Democratic majority. Many of them feel that they are drudges working through a long, narrow corridor of specialization, but in this they are not too different from, say, the students in law or medicine.

Business school students, though, probably have an eye fixed more firmly on a career than do most graduate students. They have come back to school to advance their careers, spending their own time and money—and quite a few take loans of as much as $5,000 to get through. Don Folts, director of placement, reports that they are shrewd and sharp in negotiating with the companies that recruit at the school. About 500 of the graduating class will be looking for jobs, will talk with representatives of 350 companies in 6,000 interviews—and will emerge with average salaries close to $8,000. About half will find their own jobs in the end. About 100 of them will hunt out jobs in small companies—and they are canny in picking companies that will have a way open to top management, not reserving it for members of the owning family.

The school is unusual in many ways. It was started in the early 1900's and met stiff oppposition from many old-timers at Harvard who could not see a school that would specialize in the mere making of money. It was started not too long after U.S. Steel was organized, when the railroads were at the top of the ranking of companies, when antitrust was a rather new notion, before the Federal Reserve System was set up. It had, in many areas, to develop its own courses, make its own theories of how business operates. It pioneered as a graduate school when most schools of business were undergraduate. It developed programs—such as its Advanced Management Program and Trade Union Program—to bring back older men for advanced study.

But it is perhaps most famous for its "case method" of teaching. Its first catalogue stated that the "problem method of teaching will be introduced as far as practicable." This was almost certainly a groping to adapt the Law School's case method and perhaps something of the clinical teaching of the Medical School. But another way of looking at it is to say that it was a work of genius to find a method of teaching, a body of material that could be analyzed, in fields where there was little or no theory. But of all the methods of teaching at Harvard—and Harvard's many academic circuses probably enlist them all—this has become the most famous.

It starts with a case: a business situation demanding a decision which has been researched by one of the faculty. There are now 25,000 of these on call and they are being added to at the rate of 500 a year.

The instructor assigns the case to his class—say 90 students. They read it, discuss it in small groups—usually eight or so members of what is called a CAN group, because they come from one dormitory and may meet late at night or early in the morning in the toilet to discuss the case. The case gets one hashing-over there.

Then the class meets in a small amphitheater-classroom, designed to the school's own specifications. There are desks in concentric rows, places for about one hundred, all facing the instructor who stands in front of a battery of electrically controlled blackboards.

Let us take a look at a case and the session in which it is discussed:

The case is that of "Continental Products Company." It had promoted Robert Long to first-class fireman over the claims of Henry Schwab. The case promptly went to arbitration and the students were given what amounted to a transcript of the arbitration hearing. The hearing centered on Schwab's claim to the job: the fact that for years he had filled in as first-class fireman and was, even during the week of the hearing, running the boilers. Schwab had seniority over Long. But management had selected Long because it believed he was more stable emotionally, would be more dependable. They cited Schwab's record; difficulty in taking orders over the telephone, one attempt to strike a foreman with a pipe, the man's feeling that the world was against him, the fact that he had recently been found asleep on the job. The record was detailed—close to 4,000 words. Like all cases, this one did not provide any answer in the back of the book. And in the Business School's method of teaching the answer is not too important—it's the analysis that counts.

The class is in Aldrich 211 at 10:10 in the morning, about a month after the term has opened. Perhaps ninety in all—most graduate students, including three Radcliffe girls, but with eleven members of the Trade Union Program sitting in. Among them, representatives of British, Indian, and Puerto Rican unions and of the Operating Engineers, which would have had jurisdiction in the case.

The instructor is James J. Healy, twenty-five years at the Business School, a nationally known mediator, member of a panel set up by Labor Secretary Arthur Goldberg to look into the West Coast maritime dispute only a few weeks before this class.

Healy makes only the briefest introduction, explaining that the case was written fifteen years before when unions had little control over promotions. He turns to the class abruptly and says: "O.K. In your opinions, what are the merits of the case?"

There is no tentative probing. The first student who holds up his hand lays out the frame of the analysis. Is the relative ability of the two men equal, or does the better man get the job? What is ability on the job—knowledge of the job, physical capacity of the man, mental assets? How can you measure these abilities—by observation on this job, observation of the man on another job? Finally, there's the "gut feeling"—the subjective judgment of the plant engineer, which is probably the factor that counts.

Healy puts the points on the blackboard. Then begins the process of balancing pros and cons on Schwab. He had been caught sleeping on the job, but that has little or no bearing since he had not been fired for that offense. He had swung on a foreman, but again the company had condoned that. He had fouled up the job of putting a pump on stream, but others also made that mistake. The evidence in the record was vague. There remained the telling point: the management felt the man was emotionally unstable and this was a job on which the plant's power, the drinking water of the town, and even lives might depend.

For Schwab were these points: he had done the job over long periods of time, he had met emergencies on these shifts while he was filling in. In short, the case came down to management's word against the union's.

A student decided for the union. His main point: the superintendent had said that Schwab might be able to handle the job if he had additional training. But Schwab had already had years of training—what could more unspecified training possibly do for him? This point threw the whole of the management's motives into question—so Schwab should get the job. Only two in the room opposed the decision. One of them said, "The critical point is how they expect Schwab to behave in the future, and on this the management's confidence in him is crucial."

But then the Britisher spoke up: He had thought the case was made after hearing the first two or three arguments. But the whole essence of the case was to look at the contract. The question is, what is seniority? In Britain this would mean the number of years the man had worked for the company. From the information in the case, it appeared the man had worked twenty-four or twenty-five years for the company. He had performed well and faithfully. He had carried out the duties of a first-class fireman many times to management's satisfaction. We all of us embark on our careers hoping for promotion. Was this company's decision any way to reward a good and faithful servant?

Another union man spoke up: The management had been weak in not bringing out, not putting more stress on the fact that at least once Schwab had falsified his records and also that he had difficulty in taking instructions over the telephone.

A student broke in: "Schwab has the years. Management had a number of good things to say of him. He had demonstrated his ability." Then the clincher: "What about Long, who did get the job? The case says almost nothing about him. We have no real way of comparing the two."

At this Healy took over the discussion with a question of his own: "Why should the burden be on management to prove that Long is better? Why is it not enough, in a case before an umpire, simply to say that Schwab is not good enough?"

Then an American unionist spoke up, his voice rumbling across the room with the conviction that comes from years of sitting in on labor-management negotiations.

"This is basically a violation of the seniority clause of the contract—and there's no more to it than that.

"I agree with some of the observations of the management students . . ." This brought general laughter.

"The fact is that Schwab had the years of seniority and management had allowed him to work 100 shifts plus as a first-grade fireman. Is their conduct now in line with faithful stewardship?

"If they believe in seniority, they'd better put Schwab in the job.

"This is not the approach for decent management in this society of ours."

He sat down. The class for the moment was silent under the force of his words.

Then he rumbled, "Amen." The room broke into roars of laughter.

And a student came right back: "This was a noble plea." But, he went on, it seemed to him that the key to that question was the man's ability to react in an emergency. His emotional stability was the key to the issue. And the student was not at all satisfied on that.

The talk ran on. Firemen throughout the United States have to be evaluated by a government agency that grants a certificate of competence. But the tests for license do not go into the question of emotional stability.

But then the man from the Operating Engineers rose:

"As a union representative, let me say that I would hate to deal with a company with this kind of management. They're slack, they're loose, they don't know what they are doing.

"My union would never support a fireman who had been found guilty of sleeping on the job or falsifying records.

"He should have been fired.

"These are firing offenses. We would never support a man who did these things.

"I don't like to rule for this man. He's not a good man.

"But under the terms of the contract, you would have to rule in favor of the man because of the company's loose supervision."

This seemed to be the clincher. But then the delegate from the Operating Engineers, speaking very quietly, drove in another nail:

"As a matter of fact, this case is a setup for the arbitrator. The fact is that at the very moment the arbitration was being held the man was doing the work. He was in the boiler house acting as first-class engineer. That being the fact, there's not much room for argument."

Healy then took the lead in a twenty-minute discussion of the terms usually written into labor-management contracts covering promotion. He pointed out that in many such disputes the decision must be made on "gut feelings," the visceral reaction of the arbitrator. And he gave the decision in the Continental Products case, one that many of the students did not agree with.

The case method has survived a long time. More and more cases are being developed and, under a program sponsored by the Ford Foundation, are being made available to all kinds of business schools and companies. The method is being used abroad, too, as business schools grow in Europe, Latin America, and the Far East.

It will be the mainstay of teaching in many fields—particularly those of marketing and human relations—for many years to come. Even though a lot of research is done in human relations—the Business School's pioneering work at the Hawthorne Works of Western Electric in the 1920's has been followed by a great deal of research—the world is a long way from developing a general theory of human relations.

But the younger instructors in fields where there is a well-developed body of theory—such as international trade, finance, statistics, mathematics—resort to other methods. They keep their courses primarily as discussion, basically participative—"letting the students do the talking"—but they put the theory over in notes prepared for the students—"lecturettes"—or in a series of questions carefully directed to maintain a sequence of thought.

The Business School changes, although it sometimes yields only slowly. It was not until 1959—a fact which makes some Radcliffe girls rise in ladylike wrath—that it enrolled women, admitting them to the second year of the graduate program and to the doctoral program. And the old separation between the Business School and the College is closing, in part because the Business School is taking more and more younger faculty members trained in the social sciences, in statistics, and in mathematics.

And it is anticipating many more changes.

"The basic problem," said Dean Stanley Teele before he resigned in 1962, "is how you can equip a man now with the basics he will need thirty or forty years from now. He may be running a company with a hundred thousand employees and with interests all over the world. He may be in government—with even bigger responsibilities. What can we give him now that will help his decision making then?"

The answers, as the dean had been developing them for a year or more, would extend the school in many directions.

One would be in the school itself—maintaining basic standards, such as the school's historic ratio of one faculty member to each fifteen students. Changing courses to meet the changes in techniques. Moving ahead on such things as the doctoral program, where more and more students are coming in, their eyes fixed on teaching business administration.

Then, to meet the needs of an executive over a career that would run forty years or more, Teele was thinking of a broadening of programs like the Advanced Management Program, where executives may come back for, say, some months of work to keep them abreast of their field. Teele thinks it may come to the point where an executive would come back to school two or three times, perhaps more, in the course of his career.

Finally, the school is going more and more international. It now thinks of itself as having a "seed corn" function—bringing foreigners here, sending its own people abroad to help local groups organize their own schools. Traditionally, 7 per cent of the places in HBS have been reserved for people from abroad. Currently, faculty members are working in Istanbul, Paris, the Philippines, and at least a dozen other places to help organize schools or courses overseas.

This is no attempt to set up little Harvard Business Schools all around the globe. It is rather a seeding operation—lending faculty members, sending advisers, bringing future professors to Cambridge to see how it is done here. One point, of course, is that the case method can be exported, but not many cases can. The important thing that students get from the Continental Products case is their own analysis of it, and that depends heavily on American values. Just how do you balance ability against seniority? A Turk might answer very differently than would a Britisher or an American.

But what the dean is working for is a Center for Multinational Business. Looking at the outward drive of American business, with the automobile companies becoming truly international with plants throughout Europe and other areas, with other businesses putting as much as $4 billion a year into overseas operations, the dean concludes that business will become multinational. "In the next twenty years," he said in a preliminary proposal, "the majority of business enterprises of any size in this country, and indeed in perhaps all the other industrial countries, will be multinational in nature . . . a corporation will have its home in one country but will incorporate and function under the laws and customs of other countries as well."

And, clearly, no youngster going into business today is likely to become president or chairman of a company unless he has had training and experience in the specific and peculiar problems of doing business in many countries.

So Dean Teele, looking fifty years ahead, proposed for the Business School a center that could survey the problems of doing business abroad, train people in the field, and in the end develop the courses that the Business School will need.

The dean is quiet, soft-spoken, ruddy in the face. He looks as much a businessman as an academician. His thoughts can shift rapidly from one field to another. At one moment he will say, of one of the big electric companies, "They call it decentralization, but they give every manager in every plant and in every department a manual six inches thick so he can do it as the head office says." The next moment, thinking of the school, he says, "What counts above all else is getting good men, and enough of them."

The Baker Library stands heavy in the center of the Business School. Teele paused for a moment on the sidewalk before it. A cluster of students passed around him. They were hurrying, serious. It was one of those moments a stranger may feel on any campus when the weight of the past seems to brush the heels of the young and when the future is close about. Teele was again balancing the international drive of business and the slow process of education.

There was a stillness.

"It will be a great outgoing," the dean began . . .

15

THE BEST OF THE BEST

PERHAPS the most exciting single thing about Harvard is a little-known and very quiet group called the Society of Fellows.

The society is tiny as Harvard goes—only twenty-two juniors and a handful of senior faculty members. It has no staff, no faculty, and practically no facilities—only a dining room and a lounge, neo-Georgian in style and forbiddingly paneled in oak. Its endowment is small and it came from a president of Harvard University, a prodigious fund raiser in his time, who despaired of finding someone to invest in his cherished experiment and finally provided the money himself, although he noted afterward that it took almost all he had.

The society is unique; there is nothing like it in any other American university. And it is a highly unusual institution by any standards. In an economy where achievement and routine go hand in hand, where well over 90 per cent of the jobs in our largest corporations would involve a high content of boredom, the society is set up to free its people from all routine, to devote them to not being bored. In an academic world that is largely dedicated to meeting requirements—the four years a candidate puts in working for a Ph.D. can be sheer drudgery—the society was conceived to avoid requirements, to discourage its people from working for credit. And it is one of the last strongholds of the American male: women are not admitted, not even invited to dinner.

Its people are exciting. Listen a moment to the kind of talk that goes on. The scene is a long table, bent into an open horseshoe, and blessed by some of Harvard's best food and with wine to loosen the tongue. The time is the Monday evening of one of the weekly dinners in the society's rooms in Eliot House.

The diners are mostly young—students in their middle twenties—leavened by a half dozen of the Harvard greats and old guests.

"We are trying to figure out when the Establishment in England got established? Would it be with William the Conqueror and the Norman barons? Would it be the founding of Oxford? Or would it be after Cromwell, when Parliament and the bureaucracy got into the saddle?"

"This is the country of my choice—I came here because I had no love for Mussolini and this was the place to come." This is an older man, Profesor Renato Poggioli, talking. "But there's much that is wrong with it: Too many cars, which are destroying our cities. Too much worry about Laos and not enough about Berlin, where all Europe stands and falls." The man talks with passion, he cares about the country.

A young chemist beside him, quiet and reserved, asks: "You've never fallen in love with an automobile?"

Then the talk zeroes in briefly on television. "It's a failure, a bust. It's not giving our people any sense of the national purpose, not giving them any picture of what real Americans really do. We've got to get it away from making money, give it some sense of excellence . . ."

The drift of talk moves up the table and a young radio astronomer says, "Sure, we're listening for signals from people on other stars. With the present state of the art, we can send a signal ten light-years into space—and that is enough to reach some important stars. If there are people up there, they may be more advanced, able to send signals much farther. We have the equipment, the radio telescopes that were built for other purposes but work for listening, so we listen. . . .

"Of course," he adds, "it will be a slow conversation. When it takes ten years to send a word each way, you wait a long time for answers."

"Suppose they get tired of waiting," says a young historian. "Suppose they send a space ship with some of their people to see us. Suppose they are much more advanced than we . . ."

He pauses a moment, and adds, "Let's hope that they are benevolent."

The young chemist chimes in: "Bearing the green man's burden . . ."

The range of talk is almost incredible. Crane Brinton, slim, a bankerish-looking professor and a historian whose field is France before the Revolution, questions a young linguist on the disappearing languages of the California Indians. "The coast attracted people, as it does still, and it is the best little laboratory there is for studying language and tracing the movements of the tribes by it . . ."

A Boston boy wrestles with the railroad. "The railroad may go. The New Haven hasn't been able to pay its way for ten years or more. But we've got to preserve the roadbed. It's a New England heritage. We'll need it someday for moving people and things—maybe not on the iron wheel, maybe by air-car, maybe by monorail. But we'll need it."

"You can win arguments with logic. It can be done, with reasonable people discussing something they are informed on. Why people don't listen to scientists, I don't know. They ought to, on things like fluoridation of water . . . there's just no room for difference, there . . ."

"Did you ever try to convince a woman with logic?"

"I can. With my wife—if she buys floor polish that is no good, I can show her it is no good." The young chemist is very sure of himself on this.

The dinner is long. When the group at the table breaks up, Crane Brinton, who is chairman of the society, leads the way into the lounge. Now there are half a dozen conversations going.

"We need new quarters. This place positively depresses me. We need more room for guests. . . ."

"Economics in this country is slowing down. You should see what the British, and better the French, are doing . . . with their Common Market. Most of all, go to Czechoslovakia. See what the planning is doing there . . . a highly industrialized society. We've got a lot to learn from them, go and look at it." That is Wassily Leontief, one of the American economists who has made an impact on economics.

"It's a new man, this Soviet man, this Khrushchev. It's a new position we are in in the world—meeting a nation as powerful as we, one that can destroy our great cities. We can't fight, we can't bargain. We've got to find new ways to meet it. Maybe all we can do for now is to hold, to wait for history to work awhile . . ."

What is this society?

It is an experiment in how to get the "best out of the best." It selects a small group—no one can nominate himself—of young scientists and scholars, most of whom have graduated from college and have done some graduate work. They can come from anywhere. The society last year flew in one candidate from Florence, Italy, and it routinely brings two or three from California for interviews. They need not even have a college degree.

In practice, Crane Brinton sends out about six hundred letters to professors and "people we know" asking for nominations. He will get about eighty or ninety replies. These will be winnowed down by the Senior Fellows to perhaps thirty. And twenty-two will be chosen after interviews. About a third are "pure Harvard"—the College and graduate schools. About a third went to college somewhere else and then came to Harvard graduate schools. The others are mostly American, can come from all sorts of schools.

The design: to give them absolute freedom, a full run of any of Harvard's resources that they want. Some write books, some may go into hospitals to do research, some may attach themselves to a Harvard group and simply dig on their own for the three years. The term, too, may be renewed; another three years, for exceptional scholars.

The society was the creation of Abbott Lawrence Lowell. It was founded in 1933, when he was nearing the end of his long career. It was shaped by a group of Harvard men and one Britisher, Alfred North Whitehead, the great philosopher who was then teaching at Harvard. It was designed in part after two models in Europe: the Foundation Thiers in France and the Prize Fellows of Trinity College, Cambridge University.

Lowell had several objectives in mind. He wanted the society to be of such eminence that it would attract the best scholars—to provide leadership of the best men in the university, to give Junior Fellows a freedom unmatched, and to give them financial incentives. He provided the rooms when Eliot House was designed and he provided that the Junior Fellows would live in the Harvard houses. The stipend—now about $3,500 a year plus books, laboratories expenses, and travel—has been raised as time went on. "We have probably kept up with the general inflation, but we have not kept up with the special inflation in the rewards given top scholars," one Senior Fellow puts it. The endowment has never been increased since Lowell set it up out of his own funds. Lowell's experience in not being able to find donors who would bet on his experiment continues today. One result, the number of Junior Fellows has had to be cut from twenty-four to twenty-two.

One of Lowell's other objectives also has had to be modified. He wanted the Fellows to work clear of all the grind work that goes into getting a Ph.D. But this had to be modified early—one of the Fellows sought a job at one of the great Middle Atlantic universities and was told by the president that they liked him fine, but he could not be hired because he did not have a degree, the trade-union card of the scholar.

That man happened to have a book on the presses which could be accepted as a dissertation, and he happened to have worked with a Harvard department that was accommodating. He had a degree in short order, and the job. Since then, many of the Fellows have gone on to get an advanced degree. "But we still see that they stay clear of the drudgery," says Brinton.

Basically, though, the society has held close to its founding purposes over the more than twenty-five years of its life. Two of the Senior Fellows, who select the Juniors and meet with them for sherry and talk at the Monday "evenings," are former Junior Fellows. They are professors at Harvard: Harry Levin, of comparative literature and Willard Quine, of philosophy. President Nathan M. Pusey is a Senior Fellow ex officio.

Six other professors, including Brinton, are Senior Fellows. Among them: Zoologist Frederick L. Hisaw, Leontief, Poggioli, and Edward M. Purcell, a Nobel laureate in physics. Arthur Darby Nock, professor of the history of religion, has been a Senior Fellow for more than twenty years.

Does it work?

This is a question that can never be answered definitively. The Junior Fellows have an impressive record, but they were unusual men to start with. They might have done as well in a more conventional program. And, as Harvard men say, "there are plenty of men as good in other parts of the university."

The record, though, is extraordinary. It suggests that scholars are more and more becoming men with power in their own right, more and more decision makers.

Four former Junior Fellows have served President Kennedy in Washington: McGeorge Bundy, Arthur Schlesinger, Jr., James Tobin, of the Council of Economic Advisers, and Paul A. Samuelson, professor of economics at Massachusetts Institute of Technology, who was on Kennedy's brain trust in the campaign and after.

Perhaps the best compilation of the record of the group—the 155 who were Junior Fellows in the first quarter century—was made by Professor Brinton and William M. Pinkerton, the university news officer, in 1960, the 25th anniversary year. The report:

"Its scientists have invented a satellite tracking camera, the teaching machine, the transistor, a solid state maser for greatly amplifying microwave reception, and had a major hand in the SCR-584, the first automatic tracking radar of World War II, and the Navy's fire-control system.

"They have synthesized cortisone, reserpine, quinine, cholesterol and other natural products; isolated the juvenile hormone in animals, explained the echo-ranging system that permits bats to 'see' in the dark; devised machines that 'think'; worked on the problem of transplanting kidneys in human beings; shown how to control the 'fire ant' in the South; contributed in critical ways to the mathematics that led to the H-bomb; explained the once mysterious phenomenon of superconductivity, made laboratory tests supporting a new theory of the origin of continents, and contributed to such new fields as radio-astronomy, information theory, mathematical logic, microwave spectroscopy, and nuclear physics. Right now, one of them is carrying out an experiment to test the foundations of Einstein's theory of general relativity."

A battery of the scientists have served in government, full time or as consultants, and in industry.

The scholars have also made their mark. "They have," Pinkerton reported, "written volumes of poetry and a number of short stories; biographies of Samuel Adams, Alexander Hamilton, Henry L. Stimson and Franklin D. Roosevelt, of Britain's Hugh Latimer and China's Liang Ch'i-ch'ao; histories of Russia, China, Japan, Iran, Egypt, and the United States; a Hebrew grammar for beginners and a Russian reference grammar, and articles on Sanskrit and Old Irish; studies of a street corner gang, a restaurant work group, English villagers of the thirteenth century, and Irish villagers of the twentieth.

"The economists have made important studies of linear programming, the effect of federal taxes on business, U.S. antitrust policy, investment decisions . . ." and many more.

They have among them collected enough prizes to fill a trunk, including one Nobel Prize in physics and two Pulitzer Prizes.

But it is in education that the Junior Fellows have made their biggest mark. In 1960, 128 of the 155 were teaching at

36 colleges and universities in the United States, and at McGill in Canada, Oxford in England, and Helsinki in Finland. Harvard then had 42 on its own faculty, and three of its deans were former fellows.

This moved President Pusey to declare in his 1960 annual report: "In twenty-five years, the society has clearly proved itself a congenial environment for the maturing of unusually gifted minds. . . . But, more than that, it has been an extraordinarily favorable seedbed for the development of distinguished university teachers and—I must confess with some pleasure—in particular, a place of recruitment for the Harvard faculty . . ."

The society has had its failures, too. There have been a few who took the three years as an opportunity to dabble. There was one—"an extraordinary young man who got straight A's in both the natural sciences and languages and seemed to be a versatile wonder"—who gave up and slipped off to theological school.

"It turned out he wasn't even a good priest," says Brinton.

But the society's record over all is so good that perhaps the most surprising thing about it is that no other university has tried to set up its own version. There are some offshoots: Harvard's Nieman Fellows—seventeen newspapermen who leave their papers and come to spend a year at the university—is one.

The consideration is probably not money, for the investment in the society is modest. Lowell originally put in about $2 million. No new money has been added, although several members feel that an injection is needed now because of inflation over the years.

The real considerations may lie in that slight and subtle thing known as atmosphere. This is one reason the society has not expanded. "We couldn't expand," says one Senior Fellow. "Shortly that closeness that makes for good communication would be gone." The atmosphere of Harvard itself is important, too. As one of Harvard's wisest administrators put it, "The university is dynamic enough so that the Fellows don't become self-conscious snobs or intellectual prigs."

Only in Harvard! Nowhere else would the comment be so cutting.

16

ON MANAGEMENT

A STUDENT who had come to Harvard from the University of Chicago went to see the dean of graduate students.

"Dean, I'm having trouble."

"What is it? Studies too hard?"

"Oh, no. I'm doing fine," said the student.

"Trouble making friends?"

"Oh, no. Lots of friends."

"You must have trouble meeting girls, then."

"Oh, no, not that either," the student went on.

"Well, then, what is it?"

"Dean, I just can't grasp this place in its totality!"

This student's bewilderment amuses some Harvard people. They *know* that Harvard cannot be grasped as a whole. And they know that only someone from Chicago would have such a silly problem.

It is probably true that no single person, not even one working in the center of university affairs, can grasp Harvard as a whole any more. Its major components have grown to become worlds in themselves.

But the aspect of Harvard that does concern every part of the university and that is least understood is perhaps its administration.

Harvard is organized as no other university is. It operates much like the British government on an unwritten constitution. "You can never find out how the place is run from anything in print," says one veteran administrator. And another adds, "It's so complex that no generalization will hold for the whole institution. And, in any case, they will stone you for whatever you do say about it."

The precedents on which Harvard is organized lie in what is now considerably muddled history. The university, for example, likes to trace its ties to Oxford and Cambridge. The Great and General Court of Massachusetts which in 1636 passed the legislation founding the College included six alumni of Cambridge and one of Trinity College, Dublin. But the colonists, who had a healthy suspicion of the institutions of the old country, put upon Harvard the stamp of their own notions. One was in the development of the senior governing body of the university, the Corporation, as a group of laymen—not members of the faculty nor members of the government, which was the general practice in Europe. Other parallel developments made the government of Harvard something quite unique.

Oxford and Cambridge, which might well be considered the models for Harvard, really are not. They are *sui generis,* a class by themselves and probably truly too complicated for any outsider to understand.

Most American universities are modeled in large part on the German universities. These were set up originally by the

German states and administered largely by the prince or by his minister of education. Over the years, however, the faculties organized rather tightly against the power of the state. The faculties found the source of their power in their right to vote degrees—and hence to prescribe what courses should be given, what would be the qualifications of the men who would teach those courses, and other subsidiary policy, even, in some part, as to what the requirements for admission of students should be. Occasionally a prince might make an appointment over the heads of the faculty, but that was rare even a hundred years ago.

This became the pattern. The faculty, organized into a group called the senate in most institutions, became the real power. Many American institutions operate on this basis and, in some, it is probably fair to say that the faculty runs everything. This, though, would be the very antithesis of Harvard.

What are the keys to running a university? One way to look at it is to say that there are three: The obvious one of things material—control of budgets, investments, buildings, and so on. The second, peculiar to universities, is the power to grant degrees, and from it many things flow. The third, which is quite subtle, but is perhaps most important, is the power of appointment, the power to perpetuate the institution.

All three of these are lodged at Harvard, subject to a delicate system of checks and balances, in a peculiar institution—the president and fellows of Harvard, known in short as the Corporation.

The establishment of the Corporation and the definition of its powers go back to Harvard's Charter, granted by the Massachusetts legislature in 1650, signed by Governor Dudley, and still preserved in the Harvard archives and reprinted in the Catalogue. After declaring that the Corporation should be made up of the president, the treasurer, and five "fellows," the Charter states (in modern spelling):

"And the President and fellows or the major part of them from time to time may meet and choose such officers and servants for the College and make such allowances to them and them also to remove and after death or removal to choose such others and to make from time to time such orders and by-laws for the better ordering and carrying on of the work of the College as they shall think fit. Provided the said orders be allowed by the Overseers."

Much has happened and many interpretations of those basic powers have been made in the more than three hundred years since these vague sentences were written. The Charter was suspended for a while. It was reinstated and guaranteed in the Massachusetts state constitution of 1780—before the Constitution of the United States was adopted. The "fellows," in President Dunster's original interpretation, were probably intended to have stipends as teachers or students. There simply was not enough money for that in those days, and the Fellows in general have been and are Boston businessmen and lawyers. The Overseers for many years were state officials, magistrates, and ministers of the neighboring communities; it was not until 1865 that the legislature gave up this control over the university.

The concepts, of course, have been steadily refined. For example, the Catalogue now states:

"The President and Fellows of Harvard College are still the principal governing board of the University, subject only to the consent of the Board of Overseers. All the property of every department of the University stands in their name; every faculty is subject to their authority; all changes in policy or in the University statutes require their consent; all degrees are voted and all appointments made by them."

But the Charter's basic wording is still the prevailing concept. In more than three hundred years, while the College has grown from a handful of students into a university with fourteen thousands students, it has been the basic document. Even today university authorities turn to it when they want guidance on some fine point.

The Charter and Statutes (which are Harvard's and not the work of the Massachusetts legislature, as the name might suggest) still give only clues to the actual running of the university.

The Corporation, in which the powers finally reside, is after all more a legislative than an executive body. Its greatest responsibility, in the end, is to name a president.

The Overseers, who are now elected from the alumni, have only the power of veto. This, too, goes back to the original Charter, and the college authorities have seen to it over the centuries that the Overseers are largely limited to this. The Overseers carry out their function in quite another way. They provide Visiting Committees—forty-three of them—which keep an eye on every part of the university. Sometimes these committees have great weight—it was a Visiting Committee chaired by David Rockefeller that in the middle 1950's recommended the building of more houses so that the College might be expanded. Some Visiting Committees may do little more than act as money raisers for their part of the university. The Committee for the Business School acts much as would a board of directors for a corporation.

In this way, the Visiting Committees keep alive an old Harvard tradition: that every part of the university should be open to outside scrutiny.

But perhaps the basic function of the Overseers is unwritten and usually unnoted. They provide a very powerful check on the administration. Whenever a department head or professor feels that something is going on which he finds objectionable or a disgrace, he can take it up with the chairman of his Visiting Committee. The chairman, in turn, can take it to the president. If that does not provide satisfaction, he may take it up in a meeting of the Overseers. There, with the Overseers armed with their constitutional power of veto, the matter can be settled.

All this, though, is chiefly a framework in which the president operates. The president of Harvard has very great power —which stems largely from tradition rather than from any legal grant.

Here is the language—in one paragraph of the Statutes—which sums up the president's responsibilities:

"It is the duty of the President of the University to call meetings of the Corporation, and to preside at same; to act as the ordinary medium of communication between the Corporation and the Overseers, and between the Corporation and the Faculties; to make an annual report to the Overseers on the general condition of the University; to preside on public academic days; to preside over the several Faculties; to direct the official correspondence of the University; to acquaint himself with the state, interests, and wants of the whole institution, and to exercise general superintendence over all its concerns. For the better discharge of these duties, he must live in Cambridge."

The other side of the coin of responsibility is, of course, power. The president is central to the whole operation of the university—he alone sits on all the key organizations—the Corporation, Overseers, and faculties. He is the "medium of communication." By tradition, he presides over meetings of the faculties—a most important power for a president facing an embattled faculty.

The Statutes provide for a University Council—a group made up of the combined faculties which would correspond to the senate which is the governing body of faculty-oriented institutions. By tradition, the presidents of Harvard have carefully avoided calling this body together. Any one faculty is liable to have great trouble coming to a concensus on something touching its affairs. To get a piece of legislation through something as unwieldy as would be a body of the combined faculties of Harvard would be a vast undertaking—and so the Council is rarely called.

The Statutes provide that the President must live in Cambridge. This goes back to the days of Increase Mather, who ran the university from 1685 to 1701 while living in Boston and serving as minister of the Second Church. Indeed, for four full years of this period he lived in England and the management of the College really fell to two tutors, John Leverett and William Brattle. There was enough dissatisfaction with the part-time administration of the minister so that the provisions on the president's living in Cambridge is still on the books.

As Harvard is actually run, tradition and the subtleties of power balance out. Perhaps the key clause of the unwritten constitution—the equivalent of the Bill of Rights in the federal Constitution—is the right of consultation. A president, even where the Charter gave him clear power to act, will not go far without consulting leaders of the faculty, and perhaps of the students.

As the institution has grown it has hardened. It is most unlikely that a president of Harvard could do today what President Eliot did to the Law School, for example, Eliot was named over much opposition, indeed, the consternation of the Harvard faculty, as Morison puts it. But early in his administration he grasped the fact that the Law School needed an overhauling. Eliot recalled that as a junior in college he had met, in a friend's room, a young man named Christopher Columbus Langdell. In 1870 he remembered the man, sought him out in an obscure New York law office, and brought him to Cambridge. He shoved through Langdell's appointment as a professor, then shoved through his appointment as dean. Within a year or two, Langdell instituted the case system and required written examinations, thus sweeping away the last remnants of the old system of apprentice schooling in a lawyer's office. In short, Eliot and Langdell shook the Law School from top to bottom, but it is difficult to conceive that any president of Harvard could do that again.

Other traditions, built up over the years, underlie the whole administration. One example is the appointing of committees to consider university problems. This is done by the president—and the man who appoints a committee can obviously go far toward shaping its findings.

But how does it all work out in practice? How is this seemingly amorphous and certainly sprawling institution actually run?

Here nicely balanced forces—autonomy versus central control—run through the whole fabric of Harvard affairs. The result is an institution of an enormous flexibility and great power to innovate, still under central guidance.

Harvard's central structure is small. Working under the president is a small group of ten men, ranging from an administrative assistant to the university news officer. This is a tiny central staff for such an organization and yet even that is a major expansion in Harvard eyes. As C. A. Coolidge, senior member of the Corporation, says, "Only a few years ago, the whole university staff was one man—President Lowell."

This structure is possible only because power has been widely delegated over the years. Each school and each activity is autonomous. In the old Harvard phrase, "every tub stands on its own bottom."

This means that every major activity is independent on money considerations. In the consolidated Harvard budget, some thirty-seven different activities—ranging from the Faculty of Arts and Sciences through the Arnold Arboretum and the Harvard Forest and six museums—have their own budgets and accounts. Each faculty, for example, is quite separate on financial matters. The dean of the Faculty of Arts and Sciences, by far the largest of the nine faculties, administers endowment funds that totaled $157 million in 1960 and has an operating budget of $28 million.

The deans of these faculties are powerful men running huge educational institutions on their own. But they have a subtle series of checks and balances working on them. They control great investment funds, but they have to raise their own funds. Harvard's big drive of the 1950's was for the Faculty of Arts and Sciences—the College and the graduate school—but not for other schools or activities.

The deans, too, have to operate on budgets which must be approved by the Corporation. They are not dependent on the university for their income. That can come from many sources—endowment, tuition, federal grants, alumni gifts. But at the end of the year accounts have to balance.

If a dean runs over his budget, the university makes him a loan to cover the deficit, and charges him interest on it. Conversely, if he should show a surplus, the university would pay him interest on it.

The results are more than simple bookkeeping. If an activity consistently loses money, the university can reach into its invested funds to pay off the loans it has made. But, much more important, this control through budgets means that the university can shape the expansion of its schools and other activities. There can be some empire building—a professor whose field is expanding and who has good contacts with the foundations or with federal agencies can build up his department very rapidly—but the university's central control means that Harvard grows in balance.

Here again are checks and balances. Empire building may be a problem. "Our professors are the world's masters when it comes to raising money from foundations," says one Harvard dean.

But there are also departments, particularly in the humanities, and even whole schools, that have trouble raising money. The "every tub on its own bottom" principle means that whole fields which are not favored by the foundations or government grants might wither. Or a new activity may just never get flying on its own.

To take care of these, the president of Harvard has control of funds—unrestricted money given to the university—which now amount to more than $50 million. This is a powerful lever for ensuring that the university moves ahead in balanced growth and that good ideas of any sort can be supported. And that's why "free money"—gifts that are not restricted to a specific use—is so important to college administrators.

On matters educational, Harvard's faculty is a great force, but even here the initiative is usually with the university authorities.

Again, the operation of that democratic institution known as a faculty is an enormously complex, subtle thing. C. P. Snow has written a whole series of books exploring aspects of it in the British universities. American fiction is overrun with stories of it. But as one veteran university administrator puts it, "faculties work like the U.S. Congress. The departments tend to work together to scratch each other's backs. The result is that it is extremely difficult for any faculty to review its work as a whole."

One result of this shows in the proliferation of courses in colleges and graduate schools of all kinds. How it happens is simple. A professor goes to the dean and says, "I've become interested in a new area—Medieval Mechanics. I would like to volunteer to give a course in it, simply as an experiment." The dean, who is, after all, the instrument through which the faculty does its work, goes along. Three years later the head of the department comes around and says, "Look, we can't allow Hobson to go on this way. Medieval Mechanics has become a splendid course. It is attracting fifteen students each term. We really need a new professor to give it." If the dean demurs, the department head has a clinching answer: "Can this university afford not to list a course in Medieval Mechanics when every other first-class institution has it?" So the list grows, catalogues become thick as telephone books—and seldom does any one really look at the curriculum as a whole.

At Harvard, though, the long development of tradition has brought powerful central forces to bear on educational policy. The very heart of the power that the German university faculties used to enhance their own powers is firmly lodged with the Corporation. It is the Corporation that votes degrees, on the recommendation of the faculties, with the consent of the Overseers. Similarly, the power to appoint deans and professors is firmly lodged with the Corporation.

How these powers can be brought to bear is shown in two examples. President Eliot, who was one of the great, if not the greatest, revolutionary that American education has ever seen, changed the whole pattern of American education when he abolished the entire structure of formal requirements for a degree by putting through the "elective" program—under which a student had complete freedom to choose all his courses in the College. Other colleges adopted something akin to this sweeping freedom and the secondary schools took it up, too. Eliot, more than any other man, broke up the concept of a classical education. Yet two things must be noted. Eliot worked long years to put his program over—he was to serve forty years as president of Harvard. He also rode powerful forces developing in the country, notably the insistence of parents in many walks of life that their children get a "practical" education that would fit them for life in the rapidly expanding worlds of business and science. Even so, Eliot never succeeded in getting the Harvard faculty to go along completely with another major project of his: to make college a three-year proposition rather than four.

President Conant used the traditional powers in putting through the last major modification of the curriculum in Harvard College—the general education program. Conant's objective was clear: to give Harvard graduates some common body of knowledge, for students' freedom to choose courses was still so great that a man could spend four years in college and have practically no work in common with other students. There was also ferment in the country—as World War II drew to a close—over the place of education. Colleges, foundations, study groups of all kinds were looking at the traditional curriculum, and these were pressures to which Harvard would have to respond.

Conant appointed a committee headed by Paul Buck, and including some of Harvard's most distinguished scholars. The committee produced a book, *General Education in a Free Society,* that looked at the problem of education in the broadest terms. But its recommendations for Harvard were specific. They centered on a recommendation that each student, whatever his specialty, should take courses in the three great areas of learning—Humanities, Natural Sciences, Social Sciences. Buck took the lead in the politicking with the faculty and eventually the program was adopted. And Harvard's initiative here has been widely followed.

The point is very clear: Harvard has been a major force in education in this country through such reforms as the elective program and the general education program. But this has been possible in large part because the university is peculiarly shaped to center its powers, even on educational matters, in the person of the president.

First among all things, the real key to running a university is the making of appointments—and here Harvard has some subtle, flexible devices.

The reasons are many. Most obvious is that a university is basically a community of scholars and those scholars who count have tenure—a professor has a permanent appointment. This gives him two great advantages, reasonable financial independence and the guarantee of academic freedom. He cannot be fired simply because he has unpopular opinions. Indeed, in this day and age he cannot be removed for anything short of the gravest misconduct. So the whip that a business might hold over a man to ensure performance is not even visible in the academic world. It is becoming less and less visible in many businesses, but in a university it has all but disappeared.

From the viewpoint of someone running a university, this means several things. A permanent appointment is a financial commitment of major proportions. A professor appointed at, say, thirty-five will hold office for thirty years. His salary is likely to be $15,000 and it will almost certainly increase. In making an appointment, the university is making a $500,000 gamble—and probably much more.

Then, too, the post is filled. If a man who at forty was doing brilliant work suddenly loses much of his productivity at fifty, it is a long, long time before the university can move another effective human being into that spot.

President Eliot, who did not have to worry about tenure as his successors do, saw this clearly: In his inaugural address he said, "To see every day the evil fruit of a bad appointment must be the cruelest of official torments."

Perhaps the greatest reason, though, is more subtle. A university takes a long view unique among institutions. It builds for a thousand years and more—for there is no end to its essential functions of advancing knowledge and of transmitting it to future generations. Moreover, a university like Harvard is self-perpetuating. Each generation of Harvard administrators and, though not quite so directly, each generation of Harvard professors, selects and trains its successors. The history of universities is long and it is full of examples of institutions that have become ingrown, lost their life-force, and declined.

American universities make their appointments in many ways. In some, much larger than Harvard, it is a fairly casual process, left largely up to the deans with the president merely signing the papers. A man who stays around long enough working as an instructor or an assistant is likely to become a professor and get tenure by the seniority system.

The two Harvard presidents who did so much to shape the university, Eliot and Lowell, made their own appointments. Many professors still at Harvard can recall how their recommendations would go up only to have a door slammed against them.

But there is another aspect to this—the men without tenure.

Every university has a corps of them—researchers, instructors, tutors, assistant professors. Harvard is peculiarly dependent on them because it has put so much stress on the tutorial system, where a faculty man meets with individual students or small groups. This has been long established at Harvard, its values have been long debated, but it clearly is expensive in terms of man power. Harvard has always been able to attract these people; they can stay at Harvard for several years and then find jobs at other institutions without too much trouble.

In the 1930's, though, the system came to a point of crisis. There simply were no jobs around. Professors tried to keep their people on, no matter what. President Conant, bedeviled by the feeling that the younger men would stay at Harvard too long, beyond the age where they could get other jobs, and by the feeling that Harvard's own channels were clogging, installed two devices. How they work is shown most clearly in the Faculty of Arts and Sciences.

One is the up-or-out system. An instructor has a one-year appointment, which can be renewed only once. If it is not renewed, he leaves. Or he may stay on to become an assistant professor, where he would have a nonrenewable five-year term at the end of which he must move up or leave.

Conant, whose years saw plenty of trouble, had to wage a battle that Harvard people still consider a classic to install this system. Once in place, it cleared the channels of deadwood.

Conant's other device was the ad hoc committee. Unlike the up-or-out system, which is fairly widely used in organizations, this is a rather rare idea which Conant imported from the newer British universities. It is used in its pure form only in the Faculty of Arts and Sciences, which is by far the largest of Harvard's faculties. The Law School uses an anomaly, a "standing ad hoc committee"—a permanent committee which does have outsiders from the profession on it. Other faculties use a wide range of methods. The Business School, for example, has a committee made up of faculty members.

An ad hoc committee is formed for one job—to make a permanent appointment to the faculty.

It is chaired by the president. So important did Conant consider this that he never missed a meeting of an ad hoc committee. Even in the years of World War II when he was involved in a wide range of defense problems, including the Manhattan Project, which built the first atomic bombs, Conant returned to Cambridge for these meetings. President Pusey has carried on.

The committee will have two men from outside the university, top men in their field but men who would not be candidates for the job that is open. Frequently they are professors from other institutions. Or they may be professionals in the field—Aaron Copland and Samuel Barber have served on committees for the Department of Music, for example. These outsiders have two functions: They serve as unofficial outside auditors, in the tradition of having outsiders scrutinize Harvard affairs. And they are scouts, who can bring in candidates from the field who may have had nothing to do with Harvard in their careers.

The committee will also have two men from the Faculty of Arts and Sciences, but they will be from related departments and not from the department that has the vacancy to be filled. Members of that department will suggest a candidate and will appear before the committee to support their candidate, but they cannot sit on the committee.

Every committee addresses itself to one question. It is not: Is the department's candidate adequate for the appointment? It is: Who is the best available candidate to fill the post—wherever he may come from. The outsiders may have a candidate. The committee may reject all names put before it and institute a new search for a man.

There are many subtleties involved. The committee may sit all day, and in that time it may audit quite thoroughly the entire work of the department. At least, the president will get a measure of whether the department is meeting Harvard standards in teaching and in research.

The decision is made by the president—and not by consensus.

And this is the heart of the matter. For, through the ad hoc committee, the president reaches down into the very heart of the College, which is still considered the core of the university, the pacesetter, the base on which the graduate schools were built.

Here the president keeps his finger on the central key in perpetuating the university—the appointment process.

The ad hoc committee is probably peculiar to Harvard in this country. It is possible, too, that any other institution would have great difficulty in using it. The supply of people qualified to sit as outsiders on an ad hoc committee is, after all, limited. Most of them, too, are coping with overcrowded schedules. They come to Harvard partly because of its prestige. Even more because, as one Harvard administrator says, "they feel it is important that Harvard get the best men." They seem to feel that it is important that some institution take the lead. Harvard is in that position. And so what strengthens Harvard strengthens the fields in which they are interested—or the universities they serve.

The president of Harvard has other powers: created in the long series of battles that is Harvard's history, inherent in the position of president, some of them lying in the ramified hierarchy, some of them almost lost in the great tangle of tradition.

The president can open a new department in an expanding field or close an old one. Harvard not too long ago gained a Department of Statistics and lost a Department of Geography. The president can revitalize a faculty by appointing a new dean. He might even create an entirely new faculty.

But his greatest power may be the powers inherent in a situation. Eliot and Conant could put through major reforms in education, but largely because they could focus the ferment outside the university, the scattered calls for a new kind of education.

In the late 1930's Conant virtually closed the School of Dental Medicine and reshaped it. He felt that it was too close to a trade school and not doing enough to advance knowledge in its field. But there was also a strong current running in the profession. It had become clear that dentists who concentrated on plugging holes in people's teeth could never hope to overcome the nation's dental problems. There were too few dentists to cope with the cavities, and even if the number of dentists were multiplied it would fall short of the number needed to give every American adequate dental care.

Similarly, if some Harvard faculty goes into decline and a school falls behind, that very fact gives a strong president leverage.

It is this curious balance, akin to the federal system of checks and balances between the legislature, the executive, and the judiciary arm, that has made Harvard what it is. It is the system, flexible and subtle, that has developed a community of communities, a sprawl of active institutions whose one common denominator is that they live under the Harvard name.

There is very little to it that is simple. The right of consultation, the unwritten constitution, and the independence of strong deans and strong professors guarantee that. And the very growth of the institutions, the long accumulation of history, and the diversity of the components of Harvard have also changed the powers of the president. It is probably true that no Harvard president will ever again be able to bull through reform as did Eliot.

As the totality of power that is Harvard has grown, the power of its executive has become more hedged, more limited. A similar process goes on in business and in government.

President Eliot set a pattern. He was appointed early, when he was thirty-five. He was to have a long reign, he knew he could wait twenty years or more to have his ideas accepted. In the end he won a great deal and outlived many of his opponents.

Today, anyone coming to the presidency of such a sprawling, subtle institution might feel that he would put his stamp on it during his lifetime, but he might have some profound wonderment as to what that impression would be over even a long lifetime.

17

A BUNDLE OF TRADITION

THE glue that holds together an institution is its mystique—the impress of its purpose, a bundle of tradition.

This is a world of institutions—governments, corporations, schools, churches, many others. They are so all-embracing that a man can escape their impact only in his home; and the home of even a Canadian trapper cannot be sustained long without the work of a myriad of institutions.

Each institution has its own peculiarities and its own dynamics. Each seems to attract its own people: a newspaper's editorial material screens its readers, each block in New York will have a kind of people appropriate to it. Some institutions are easy to know; they project an image that anyone can sense. Others, such as a major city, will retain mysteries even after someone has given them his lifetime.

An ancient and complex institution like Harvard has something more than this. Robert Graves, the poet, has used the

Islamic word "báraka" to describe this sort of feeling. A word of varying meaning in varying interpretations, it is the quality of life, or inspiration. A poem, a house, or even a dented cooking pot can have báraka. The King James Version of the Bible had báraka. The New English Bible has been purged of it, Graves believes. Perhaps the nearest equivalent in English is a special sense of the word "style"—a style in doing things.

Harvard's impact on people is powerful and subtle. One small way in which this is shown is this. To Harvard each year come hundreds of boys who had been class officers, presidents of student councils—wheels in student government in their schools. They come to Harvard and, as one of them put it, "Within days you get the idea that student government is not important here." Student government is not important. That value is felt by freshmen almost through osmosis, without anyone being forced to tell them.

Just what is this tradition or image or mystique?

Harvard shares with all great universities some of the great traditions—a striving for excellence, a fierce independence in the search for truth, a belief in the individual and his potentialities.

It has some of the mystique of a great city—London or New York or Paris. It is old, well into its fourth century. That feeling drips from the black lantern-lights on the brackets in the Yard. It is an established leader, the head of the centipede in many areas of education and science and medicine. It has the confidence of accumulated wealth, of an old Beacon Hill lady who has so much silver that it is vulgar to count it. This is all part of what lies behind Harvard's imperturbability. You cannot tell a Harvard man much because he has heard it already, or it has happened before at Harvard.

There is a basic pride in generating new ideas. This can be the cocktail party quip so strong that it amounts to character assassination. At the time of Ernest Hemingway's death, one Harvard alumnus said: "Mark Twain wrote books about boys that adults enjoyed. With Hemingway, it was vice versa." But, at the other extreme, it makes Harvard a prodigious innovator and an institution that commands the loyalties of tens of thousands of men. And the university depends on this spirit, for if it could not continue to draw to it hundreds and thousands of men of high caliber, it would soon shrivel.

Like a great city, Harvard is flexible. It can fit an Electron Accelerator and a squad or two of research centers into itself as easily as, say, the United Nations fits into New York.

But it would be easy to push this analogy too far. Harvard has a control over its destinies and a central direction that no city has. For example, Harvard has limited its growth. Where the University of California has more than fifty thousand students, and may double that rapidly, Harvard has fewer than fourteen thousand and is not likely to double that number for many years.

But the most important quality, and one that is shared by great cities, is the institution's life-force, its vitality.

Harvard is one of the oldest of American institutions. It has seen others rise and fall. The railroads had enormous vitality when they were opening up the continent, maintained it for generations as both Casey Jones and their financial reports testify, and then lost it.

Harvard's vitality has certainly waned at times. There was a group of presidents from 1846 to 1869 whom Samuel Eliot Morison has described as minor prophets. Even earlier, an English writer visiting Boston in the late 1830's, commented on Harvard in these words:

"If Harvard is ever to recover her supremacy, to resume her station in usefulness and in the affections of her people, it must be by a renovation of her management, and a change in some of the principles recognized by her. All American citizens are proud of the array of great men whom she has sent forth to serve and grace the country; but, like some other universities, she is falling behind the age."

This was Harriet Martineau. She went on:

"Her glory is declining, even in its external manifestations; and it must decline as long as the choicest youth of the community are no longer sent to study within her walls. . . . When I was at Boston, the state of the university was a subject of great mourning among its friends."

It was not until Eliot began the great work of making Harvard a true university that this low state ended.

Today the "external manifestations" of Harvard's vigor are abundant. Harvard is building on a great scale. L. Gard Wiggins, the administrative vice-president, has about $95 million in new construction on his books. Harvard, being tax-exempt, "writes off" any new building as soon as it is completed. So the $95 million represents work in all stages of construction, from the time plans are made until all bills are paid.

Another manifestation came at the time President Kennedy was inaugurated. He immediately called to Washington a corps of university people, testimony to the interdependence of government and the universities. Among them were eight men from Harvard: David E. Bell, director of the budget; McGeorge Bundy, special assistant to the President for national security; Abram J. Chayes, legal adviser to the Department of State; Archibald Cox, solicitor general; Arthur M. Schlesinger, Jr., special assistant to the President; J. Kenneth Galbraith, ambassador to India, and Edwin O. Reischauer, ambassador to Japan. Others followed—so many that Dean Erwin Griswold of the Law School is reported to have said, "Old deans never die. They just lose their faculties."

Perhaps the most important manifestation of vitality is in Harvard's efforts abroad. The setting up of centers for Middle Eastern, Far Eastern, and International Affairs; the effort of Deans John U. Munro of the College and Frank Keppel of the School of Education to train members of the Peace Corps; the Harvard missions to Pakistan, Iran, and African countries; the dozens of research projects and books on foreign problems —all this is evidence of striking out in new directions.

In all these things Harvard is paralleling drives in society. There are very few of the United States' five hundred largest corporations that are not pushing new plants, new products, new markets in overseas nations. Like Harvard, they cannot sit back and count their gains at home. They are pushing the challenge and the fun of new areas.

There is other evidence, not yet manifest, of Harvard's vitality. There is, for example, a restlessness that may someday lead to a new Harvard, another Yard in a new location.

Harvard was located in Cambridge soon after the General Court of Massachusetts appropriated funds to set up a new school in 1636. The reasons are far from clear, as Morison points out in *Three Centuries of Harvard.* Salem had offered a tract of three hundred acres on the borders of Marblehead, with an ocean frontage of a quarter of a mile. This was turned down in favor of a house and lot measuring slightly over an acre among the cow yards of Cambridge.

As the centuries rolled on, Harvard's location on the edge of a great metropolitan area was very important to it. As Harvard puts it, "You can define a college as Mark Hopkins on one end of a log and the student on the other—but no one says that damned log has to be out in the wilderness."

In the days when Boston was the Athens of America, Harvard and Boston were tied very closely, financially, culturally, and socially. The great Boston families—the Lowells, Saltonstalls, Lodges, Forbeses, Wiggleworths, and many others sent their sons to Harvard and built up its endowments. Thoreau, Emerson, Lowell, and many another New England writer came out of Harvard.

Today that relationship has changed. Looking at it narrowly, one Harvard professor says that the "only connection is with the financial kings of downtown." Still, Boston people serve on Harvard committees and come to Cambridge for lectures. Students by the hundred take the subway in the other direction, to the theater and museums. But Logan Airport may be the key to Harvard's metropolitan connections now. For New York and Washington are becoming increasingly important to the university. Clearly Harvard's "city" has become much more than Boston. It is the whole complex of the great cities and metropolitan areas of the Northwest—and, indeed, of the nation as a whole.

But Harvard and Cambridge are still a community. Relations between the university and the city are good, despite a lot of talk to the contrary. Harvard, in general, has its way in Cambridge. But much of the "community" feeling in Cambridge was built on two things that are changing rapidly. One was walking distance—everything in the Yard was within walking distance. One key point in locating the Accelerator was to keep it within walking distance—or bike range—of the faculty clubs at Harvard and M.I.T. The other was that faculty people lived in the town, many of them on Brattle or Kirkland Street and on others that radiated from the Square.

As the university expands, though, walking distances are stretching out. And traffic is a problem. Some quip about it, "It keeps our professors lively," but few like it. And more and more professors are established commuters, coming from dozens of towns in the metropolitan area.

All this is adding to a restlessness. There is a feeling that Harvard must expand, for it is now taking only about one quarter of the students who apply to the College, only about one third of the qualified applicants at the Law School.

One Law School professor sums it up this way:

"The thing that bothers me about Harvard is our failure to expand our facilities to accommodate the increasing number of qualified students who apply. If I were running this university, I would try to do something drastic about it—and by drastic I mean something impossible to do in Cambridge because of the limitations of the real estate.

"I would try to establish a second Harvard—preferably in the Southwest."

The thought is bubbling in the minds of more than a few men in Cambridge. This may be the next great move for the old university. But the very fact that the idea is alive is testimony to the inner vigor of the institution, its unwillingness to live for long with the status quo.

All this testifies to Harvard's vigor as an institution. But what is there to say for the other side of a university, its quality as a home for the scholar who works alone? A university is different from most institutions in that it is a place for the scholar and thinker, a place where men come to probe in essential isolation the infinite fancies of man's mind.

Saul I. Cohen, a research associate in surgery who is working on experiments to clarify the role of certain simple amino acids as regulator agents of blood-clot formation, expresses it this way:

"To me Harvard is a workshop for men dedicated to the search for and steady growth of truth, to those living in the present who look ahead with an eye on the past, preparing new men for new times."

Cohen reached into the past, to the words of James Russell Lowell:

> New times demand new measures and new men;
> The world advances, and in time outgrows
> The laws that in our fathers' day were best;
> And doubtless, after us, some purer scheme
> Will be shaped out by wiser men than we,
> Made wiser by the steady growth of truth.

William James, one of Harvard's most distinguished teachers, also tried to define the meaning of the inner Harvard, the spiritual Harvard, at a Commencement dinner in 1903. As quoted by William Bentinck-Smith, James first asked a rhetorical question. Was there not an inner Harvard that meant more than the means to worldly success and the gregarious loyalty of the clubhouse pattern? He then answered:

"The true Harvard is the invisible Harvard in the souls of her more truth-seeking and independent and often very solitary sons. *Thoughts* are the precious seeds of which our universities should be the botanical gardens. Beware when God lets loose a thinker on the world—either Carlyle or Emerson said that—for all things then have to rearrange themselves. But the thinkers in their youth are almost all very lonely creatures. 'Alone the great sun rises and alone spring the great streams.' The university most worthy of our rational admiration is that one in which your lonely thinker can find himself least lonely, most positively furthered, and most richly fed. On an occasion like this it would be poor taste to draw comparisons between the colleges, and in their mere clubhouse quality they cannot differ widely:—all must be worthy of the loyalties and affection they arouse. But as a nursery for the lonely and independent thinkers I do believe Harvard is still in the van. Here they find the climate so propitious that they can be happy in their very solitude. The day when Harvard shall stamp a single hard and fast type of character upon her children will be that of her downfall. Our undisciplinables are our proudest product."

The lonely scholars are still there. A walk about the Yard, the houses, and the streets of Cambridge on any evening will show the study lamps that mean men are getting double-duty from the day by working alone at night.

There are many other aspects to the mystique of a university and some of them seem larger than man. Consider the curious alternation among the four presidents who have run the university in its period of great growth since the Civil War. Eliot was the university builder—his great effort went into building up the powerful graduate schools. Lowell turned his attention largely to the College—raising educational standards and building the houses. Conant, in turn, put much of his efforts into the university—setting up the university professorships which allow outstanding scholars to work free of responsibility to a school or department; setting up fellowships for business and professional men under which about two hundred men can study at Harvard for a year; developing the Graduate Center, a living and social center for graduate students corresponding to the houses for undergraduates.

Pusey, when he was installed in 1953, put his first great effort into the College. He led the drive to raise $82.5 million for the Faculty of Arts and Sciences, a landmark then for fund-raising efforts.

Taken together, the traditions of Harvard, the ideas on which the institution runs, involve what seem to be paradoxes—the careful balancing of opposed objectives. One lies in the relationship between individual and institution.

Harvard's age, its riches, its facilities, its established traditions and independence, its desire to set a style in everything that it does—all this makes it an enormously powerful institution. "There is great satisfaction just in being here," one student writes, "simply because you know this is the greatest medical school in the world."

At the same time Harvard carefully preserves an atomistic, unregulated, open relationship with its people. This is in small things—a professor greeting the president, "Hi, Nate," and being answered, "Hi, Don." Or it may be in large. One reason why students rioted over the change in diplomas was simply that they felt the administration had violated the unwritten constitution by not consulting them.

Harvard, too, has cherished its characters, its eccentrics. Dean Berry of the Medical School loves to tell the story of Fritz Lipmann, who won a Nobel Prize in 1953. When he was notified, Dr. Lipmann at first declared that he would not go abroad to accept the prize. He was much too busy, he said. His friends persuaded him to go and started preparations. They found that the formal clothes that he had brought from Vienna years before were turning green in old trunks, so they sent Lipmann to a tailor.

Lipmann later stamped into Berry's office and declared, "The man is a fool."

It took Berry twenty minutes to work the story out of Lipmann. It turned out that the scientist wanted something simple that the tailor declared was impossible. Lipmann wanted a convertible tail coat. He wanted to be able after the ceremonies to take a pair of scissors, snip the tails off the coat, and have a business suit.

In all this, as one student after another and one faculty member after another declares, the most important thing is the relationship between Harvard and the individual. This, in its nature, does not lend itself to generalities. "You have to live with it to know it."

But something of this meaning of Harvard can be caught in humor, the stories of Harvard told by Harvard people.

The story of Harvard that Harvard people tell most often is almost certainly apocryphal. It concerns the visitor who inquired about Lowell in his office and was told:

"The president is in Washington seeing Mr. Taft."

This is going down in history along with, "You can tell a Harvard man, but you can't tell him much"—which may be older. Along with them goes, "The quickest way to Washington is to go to Harvard and turn left"—which goes back to New Deal days.

The stories of Harvard and politics are legion, for Harvard has both liberals and conservatives and their feelings are strong. One Harvard professor, remembering the Republicans who called Franklin Roosevelt "that man," now goes around calling the Kennedys "that tribe."

And there are as many that oppose Harvard to other schools. Mark H. Alcott, Harvard '61, tells one that gives an often-noted point of view. A shipwreck left ten Harvard men, ten Yalies, and ten Princeton men stranded on an island. They decided to build replicas of their schools. Fifteen years later a rescue ship came along. The rescuers found a beautiful Gothic structure; that was Yale. They found a beautiful

Georgian structure; that was Princeton. And they found ten little Harvard huts.

Some years ago both Harvard and M.I.T. began requiring students in dining halls to wear ties. Some nonconformists in both schools went to dinner wearing nothing but underwear and ties. M.I.T. eventually changed its regulation. Harvard kicked out its nonconformists.

William Christie, a special student at Littauer, reports what is probably an enduring classic: "Did you hear that a professor just transferred from Yale to Harvard and both universities benefited?"

Some stories, as in all schools, pit student against professor —with the students usually coming out on top. This one is from the Law School:

A professor asked a question that a student could not answer. The professor took a dime out of his pocket and said:

"Here, get out and get a cup of coffee. You will never be a lawyer."

The student took the dime and retorted:

"Thanks for the dime, you s.o.b., but I'm staying."

The professor smiled and said, "Give me back my dime. You'll make a damned good lawyer."

One professor gave his students a five-minute break toward the end of a difficult exam. He told them the story of an American in England who had been rebuked by his hosts for substituting "there goes the bastard" for "tally ho, the fox." It was an old joke, but the class laughed politely. Then as the instructor left the room to give the class a chance to finish the exam, a frustrated voice from the back of the room sang out: "Tally ho——."

And the Law School has long been hung in legend with the lines: "In the first year, they scare you to death; in the second, they work you to death; in the third, they bore you to death."

Professor George Wald established a legend for Harvard that may well go down in history. He finished a biology lecture, stood a moment in silence, and then said: "Boy, this was a lousy lecture."

Harvard has one little group of stories that are all its own. They reflect the Radcliffe girls' determination to hold their own against Harvard and against males.

A Harvard instructor—in several versions he is cited as a Business School professor—was annoyed because a Radcliffe student persisted in knitting in his class. He finally asked her to stop:

"Don't you know that knitting is a form of female masturbation?"

The Cliffie never missed a stitch. She said simply:

"Professor, you do it your way and I'll do it mine."

The classic story of Harvard and Radcliffe goes right on. The professor walks into his class for the first time and gives the students a cheery, "Hello, class." The Harvard men reply, "Good morning." The Radcliffe students write it all down.

These are glimpses, sudden flashes of light from fragments of a broken mirror, that tell something of Harvard. The spirit is there. Some Harvard students still cherish the notion of stealing the sacred cod from the Massachusetts State House. But it is as difficult to sum up the qualities of a great university as it is those of a great mind.

It is in the Harvard motto "Veritas." It is in the Porcellian gate, with its venerable porker's head mounted on high and bearing on its snout a rusty iron guard to ward off birds. Something of it is in every graduate. It is Harvard.

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THE MAN IN THE CENTER

HARVARD is a pyramid of paradoxes—and the man at the top of the pyramid is himself something of a paradox.

Harvard is the oldest of American universities, the most encumbered with treasure and tradition—and still very sensitive to the winds of change. It is a sprawl of an institution, highly decentralized—yet in the end every question of importance comes to one man.

Nathan Marsh Pusey, who came to Harvard in 1953 when he was forty-six years old, was a new departure in Harvard presidents. He came after three great and strong presidents—Charles W. Eliot, Abbott Lawrence Lowell, James Bryant Conant. Men of New England, they ran New England's noblest institution in the grand manner, putting their impress on the university and on the nation in a way that there was no mistaking.

"Nate" Pusey was a boy from Iowa, the virtually unknown president of Lawrence College (800 students) in Appleton, Wisconsin. He was not from Boston, he had no strong connections with the great Boston families, he did not look like Harvard's idea of a president. He was a most un-Harvardian choice to be the twenty-fourth president.

But perhaps Harvard's great virtue as an institution is that it not only lives with its paradoxes, it makes them work for it. Nathan Pusey (pronounced *pew-sey*), for all his quietness, for all that he is not known outside the university as his predecessors were, has been a highly effective president. In his first nine years he presided over one of the university's great periods of change and growth. Not since Lowell's day had Harvard seen such a burst of construction of new buildings and reconstruction of old—and the pace is quickening. There has not been dramatic change in the university's educational and social life, but the quiet accumulation of change is marked. Pusey's objectives are not of a dramatic, grand design. They are quietly phrased—to enrich the lives of students, to meet the needs of a world that in itself is changing very rapidly. But they may add up to far-reaching change in the life of the old university.

When you call on the president of Harvard you are struck by two things: Pusey still has a very boyish look; his hair is solidly gray, but his face is unlined, his step springy, his manner quick and controlled. He is imperturbable, perhaps impossible to ruffle. Yet this is not a frozen reserve. With a small smile, a dry handling of words, a quick understanding, Pusey has a warm humanity.

The office itself tells much about the man and about Harvard. The president of Harvard works in Massachusetts Hall, one of Harvard's oldest buildings and one with a quiet grace and dignity that says much. The office is big and light—with white-painted wood paneling, a fireplace, windows deep-set in the thick walls and with white wood shutters. Pusey uses a heavy, wood table as his workplace. It was President Eliot's desk. At his side stands a high cabinet, dated 1681. It was built by a colonial cabinetmaker on the model of English furniture of Shakespeare's time, and supposedly used by John Eliot, the Puritan preacher to the Indians. On the walls are half a dozen views of Harvard buildings and people of a century or more ago. The only things put into the room by Pusey ("I've been too busy to think much about the place") are two couches, two easy chairs and a coffee table for conferences, and a painting of the main building of Lawrence College. On his desk are only the usual paraphernalia of a businessman: telephone, dictating machine, stacks of correspondence.

It is sometime before you realize that the president of Harvard is, slightly improbable as it seems, a model of the American administrator-executive. He can carry on a lively conversation while signing letters by the dozen. "He handles a committee, keeping them working every moment on the main track, with the tact of an old master," says one assistant. And he has the gift of keeping his assistants and even members of the Corporation happily doing all kinds of chores for him.

"He has the deft, quiet touch," says one veteran member of the Harvard administration. "His predecessors, as I saw them, were strong men who did a great deal and aroused strong feelings. Pusey does a great deal, wades into the tough problems—but you don't get the harsh, cutting judgments about him that you did about the others."

Pusey has another characteristic of the American executive. He's a workhorse, but he loves the work.

Through 1961 he did two jobs. He was both president of the university and dean of the Faculty of Arts and Sciences, perhaps the second biggest job at Harvard and one that had been filled by McGeorge Bundy until President Kennedy called him to Washington in January, 1961.

Pusey in effect worked from three offices. His own in Massachusetts Hall, the dean's office in University Hall, and his study in the rambling Georgian brick house on Quincy Street that has been the home of Harvard presidents since President Lowell built it and gave it to the university. "I retreat there when I have a genuinely tough problem—like writing a speech," he says.

The point is that he genuinely likes the work. "In Massachusetts Hall, I deal with deans. In University Hall, working with professors, I can get much more deeply into the problems and frustrations of professors and the people actually running the place. It's much more like running Lawrence College." And it is much closer to what is one of the central concerns of Pusey—building up the College, the core of the university, the place where more than any other Harvard works its magic on a boy.

In the year after Pusey assumed the double burden, Harvard people watched and waited for the announcement of a new dean. But Pusey was in no hurry. "I know that the day will come when I have to give this up. I need another man, a strong man, in this job. But meantime I'm enjoying it."

"The toughest job of the president of Harvard," says another of his senior aides, "is managing himself. If he ever lets himself get run down, get too tired, then the whole show stops." Conant, when he was actively running the university, is said to have divided the workday into three periods—morning, noon, and night. He would give any two of them to Harvard. But if he had to work in the evening, say to give a major speech, he would stay in his own study that morning and work on his own projects.

Perhaps the most paradoxical thing about Nathan Pusey is the excitement he feels. He is one of the most controlled of men, never seems to have a hair out of place, always weighs his words. In talking about his early life he will frequently say, "I think it is honest"—meaning that he thinks his memory of his impulse or feeling is true and has not been varnished by time.

He is still a man who believes strongly in the passions of human beings. "I wanted to study Greek simply because it was exciting." Of Harvard, he says, "This is an exciting place, simply because of the quality of the people." And this feeling is basic to his approach to his job. "Where you put your money, into what people and programs, is one of the large ways in which you influence the university. I want to be deeply involved in those decisions." Clearly for him it is exciting to be involved.

Such excitement is basic in his philosophy. He believes that each man should have some feeling for religion, for example. He cannot quite understand a man who is detached, dedicated to science or thought, and unable to feel the mystery and meaning of religious experience.

How did Pusey come to Harvard? There were three great turning points in his life, and two of these came to him as "bolts from the blue."

He was born on April 4, 1907, in Council Bluffs, Iowa—a most unlikely place for a Harvard president to be born. All the others except John Kirkland were New Englanders—and Kirkland, who had been born in upper New York State, was raised in Massachusetts.

Pusey's father died when he was one year old. His mother taught school to put him and a brother and sister through school. As he remembers it, there was simply no money at all in the family in those days. He took straight A's in high school, but had no clear notion as to where he wanted to go to college or what he wanted to do in life.

His mother, who seemed to feel that he of all her children might go furthest, and his grandfather, with whom he used to have long talks on Sunday afternoons, convinced him that he should go to an eastern college. And he won Harvard's Charles Elliott Perkins scholarship, given preferably to men from the territory of the Chicago, Burlington & Quincy Railroad in Iowa. It was not much money, but it was enough to steer young Pusey to Harvard. This, of course, was one turning point.

At Harvard he studied English and comparative literature, graduated with an A.B. magna cum laude in 1928, but still with no clear feeling of what he wanted to make his lifework. He won a fellowship that allowed him a year's work in Europe, then took a job at Riverdale Country School, just outside of New York. The city stirred and excited him. He bought standing-room tickets to theater and opera, walked the city streets. "For a boy from Iowa, those two years were an exciting experience."

At the school he made friends with two other young instructors, one of whom was Victor Butterfield. The three talked long about starting a school for boys. "We knew exactly how to do it. We were sure it would be a success from the start." Instead all three decided to go to graduate school. The idea began to stir in Pusey that, if he wanted to stay in education, it had better be in college teaching.

He spent the summer of 1931 studying Greek at Harvard. "I simply wanted to read the Greek authors in Greek. I knew that I'd never be satisfied until I could." He went on to study Latin and Greek history, largely under William Scott Ferguson.

In 1935 he was studying abroad under a fellowship when he got a cablegram from Lawrence College. Butterfield had moved there and had been urging Pusey to come to Lawrence to start a new venture in education. President Henry M. Wriston of Lawrence hired Pusey with that cablegram—and then Butterfield moved to Wesleyan before Pusey arrived. Pusey reported at Lawrence out of a sense of duty, expecting it to be a backwoods school.

But Lawrence turned out to be pleasant—and exciting. Pusey remembers particularly two women professors who were "right out in front" in their fields. He made a name for himself as a brilliant teacher and found that his enthusiasm for books, ideas, and people transmitted itself to his students. He took time out, in 1936, to marry Anne Woodward, a Bryn Mawr graduate from Council Bluffs.

Pusey went on to teach at Scripps College in California and at Wesleyan—again at Butterfield's urging (Butterfield stayed to become president of Wesleyan and Henry Wriston became president of Brown).

Then came the first bolt from the blue. Pusey had never thought of becoming an administrator. But his old colleagues at Lawrence remembered him when the presidency opened up in 1944. They made him their candidate. When the offer came to Pusey, it scared him a bit—but he liked Lawrence, remembered his good years there, and took the job.

The Puseys had nine good years at Lawrence. He started his own small revolution in education—starting a freshman-studies course in which scientists, economists, historians, and humanists studied and taught the great books together. It was a program not too different from the General Education program that Conant was installing at Harvard.

And the college prospered. In his years Pusey raised faculty salaries from $2,500 to $4,483 on the average, doubled the college's total budget. And word of him began to get around. "I don't know quite how these things happen in the educational world," he says now, "but colleges are always hunting presidents and somehow my name got on the lists." But he wouldn't consider leaving Lawrence for another school, was quite prepared to live out his career there.

Then came the second great bolt out of the blue—one that was a bit slow in developing but that overwhelmed him when he realized its import. His own college called him. He was tapped by a New York banker. After Conant announced that he was resigning, this man reported to some members of the Corporation that he saw a "lot of these Midwestern college presidents and this was the best of them." He arranged a luncheon in New York with Pusey and three members of the Corporation. The negotiations were long, and the members of the Corporation, taking very seriously their duty, did not directly reveal their purpose. Still, the day came when Dr. Roger I. Lee, then Senior Fellow, called Pusey with an offer. His answer was "If you're sure that's the way you want it, I'll go along." He came on for Commencement, his twenty-fifth anniversary—and promptly took over.

One of the first things he did was to take on McGeorge Bundy as dean. Pusey had been given a list of four or five candidates. He'd heard of Bundy, chose to see him first—and isn't sure now that he even saw any of the others.

His first big job was to rejuvenate the Divinity School, then scraping along with a faculty of five, all but one of whom were over-age. Pusey in effect took over as dean. He went to his first meeting of the World Council of Churches partly because the organization interested him and partly to find a new dean. He restaffed the school, worked to give it a new program and to raise its endowment funds to $7 million.

He worked night and day on learning his job. "I don't see how anyone could move in here from the classroom, as Conant did, and survive," he says. Those nine years in Lawrence were indispensable training for him.

And he began to tour Harvard as no president within memory had. He went to dinners in the houses, dropped in at the *Crimson,* toured the sprawling plant. He realized that depression and war had left their ravages.

He began to look at the finances. From Lawrence, he had realized that Harvard's policy of keeping its tuition low had prevented other colleges from raising theirs, so kept much of the college community somewhat depressed. He set about raising Harvard's tuition, raising salaries—and realized that Harvard needed much more money than he had thought.

To make good the losses of depression and war, and to strengthen the College, he began his program to raise $82.5 million. It was unprecedented at that time. But even so it was a compromise. Pusey figured that he would need more than $100 million, but that seemed astronomical. He settled for $82.5 million. In the end, with accruals of interest, the program brought in close to $90 million. It made Pusey, who had come to Harvard thinking it would be rolling in money, the greatest raiser of funds that the old university had ever seen.

Now, after nine years in office, Pusey has no comparable grand designs. He does have his eye on some of the graduate schools, which he hopes to strengthen when the opportunity comes but this is not a pressing matter. Nor does he have plans to become a leader in national affairs. The World Council of Churches, which he serves as a member of the central committee and which he thinks has a "great potential in its work," is his one extracurricular activity.

"If some reporter called Nate at night on a national question," one of his aides says, "I'm sure he'd answer by saying that he felt he wasn't qualified to answer that one."

The big job is simply running Harvard. The sheer volume of work impresses his associates and outsiders. He schedules his minutes ("I haven't been able to see him three hours in the last three years," says one of the key deans). He puts in long hours on Saturdays and Sundays.

The key job, as he sees it, is appointments. "When you let department heads get into the comfortable human habit of naming their own kind of people as their successors, your school goes to pieces fast." To make sure that Harvard gets the best people it can he involves himself in every permanent appointment in the university. He uses Harvard's ad hoc committees, particularly in the Faculty of Arts and Sciences, as a "wonderful, an indispensable, way of keeping abreast of what's going on in each field so that we can move to keep up."

Simply keeping a vigilant eye on the complex ramifications of Harvard is demanding. "Our people feel that the flow of federal funds through the university is not distorting our purposes—yet. But it may. The only way to keep the government from pushing us around is to be vigilant."

To keep up with his appointed rounds the president of Harvard paces himself carefully. He relies heavily on his assistants. Small problems he disposes of with quick judgments, a yes or no, or "I'll go along." To the bigger problems he brings the classical scholar's habit of weighing carefully, evaluating, coming slowly to a decision—but then he sticks by it.

He keeps the big house on Quincy Street, where he lives with his wife and children, as something of his own fortress. He'll take papers home with him, but he doesn't like to. Similarly, he limits major speeches to three or four a year. "It takes a week out of my life to write and give a speech." He turns down hundreds of requests to speak each year—for Nathan Marsh Pusey is not the kind of man who could use a speech-writer. "The idea of giving someone else's speech—I couldn't do it. It repels me."

His chief retreat is a small house, appropriately called Hidden House, on Mt. Desert Island in Maine. He takes two months of vacation each summer, coming down by air perhaps three of four times to handle the pressing problems. The Puseys keep the place themselves without help. They sail and cruise with friends. More than anything else Pusey gardens. "I get out with a crowbar and make things grow." The crowbar is necessary because a garden on the island has to be almost literally hewn out of rock. But, once planted, things grow. "That island is wonderfully fertile."

It is largely in Maine that Pusey does his long-range thinking. In the summer of 1961, for example, he got to worrying about the steady inflation in the university's costs. "We raise salaries every year. All our other costs seem to go up as steadily. I'm concerned as to where it will take us." He called two or three of New York's most eminent businessmen, asked them to come to the island and ponder the question with him. "What they had to say didn't help very much," Pusey reports. That concern is still with him.

Two of his other long-range plans for Harvard he carries on day by day. One is to "enrich the lives of students." To carry this forward, he has rebuilt dormitories, given the masters of the houses more money for such things as seminars and speakers and plays, pushed forward the Loeb Drama Theater and the new Visual Arts building. Man is a complex animal, with needs that cannot be wholly met from books and classes, and Pusey wants to see that each Harvard student is exposed to as wide a variety of experiences as is possible. This is a quiet campaign, but it comes into many of Pusey's activities. It is one reason, for example, that he is working for housing for Harvard's graduate students and their families. These buildings, announced late in 1961, are intended to give students better housing—and to bring them closer into the Harvard community.

Each individual push in forwarding this campaign is small. There is little fanfare. But Pusey hopes that the pushes will cumulate to make a Harvard education a much deeper and more meaningful experience.

Another broad objective of the man in Massachusetts Hall is to fulfill a growing sense of world mission for the university. This is not easy to put into words. American universities have attained a dominance now. Students from other countries who might once have looked to the German or British universities increasingly come to the United States. About 10 per cent of Harvard's students now come from abroad.

But Pusey is thinking beyond this. He sees the United States developing a sense of mission that springs from "a feeling of responsibility and generous interest in world order," as he said in his report for 1960-61. As an educator he knows that that means a demand for businessmen and lawyers trained in the economics and law of other countries. As an administrator he notes the "scores and scores of scholars" working at Harvard and broadening its curriculum and life. He notes the fact that two thirds of the publications bought by the Harvard libraries are in foreign languages. He is encouraging the growth of the centers in international studies.

These are not targets around which one can build a crusade. Nor is Nathan Marsh Pusey the kind of person, slightly larger than life, that Harvard has come to expect in its presidents. He does not keep an eight ball on his desk, as did Conant. He is not likely to be remembered for his stories, as Conant is remembered for saying, "Consider the turtle. It only makes progress when its neck is stuck out." He is not likely to be remembered for the great force of his words, as Eliot is remembered for his inaugural address and Lowell for his defense of freedom in universities. He is not a salty character of the kind that Harvard relishes.

It is not that the president of Harvard does not have a sense of humor. He delighted Harvardians at the 1961 Commencement when, after the seniors had rioted over diplomas printed in English rather than in Latin, he told them: "Since you fellows are so fond of Latin, we will conduct this part of the ceremony in Latin. Here goes." And he bestowed their degrees in Latin.

It is perhaps that the gray and controlled "Nate" Pusey is a new type of leader. It is one that has not yet been taped by novelists or become familiar even to Harvard.

Nathan Marsh Pusey is the civilized man who is peculiarly the product of this country and this civilization. He is of a new sort—as are the scientists and professors who have been thrown up to the top levels of government as a result of the development of the atomic bomb, space vehicles, and the general burgeoning of technology. He is that combination of scholar, thinker, and administrator who works within a framework of historical perspective and with a belief in the inherent force of reason in making a pattern of human events.

Pusey's faith is much broader than a simple reliance on science. His field was the classics, his world was education. Indeed, in talking with him you feel that most basically of all he is working with the age-old dream of the teacher. He believes in that elusive magic of enlightenment that somehow opens young minds, makes them work and flourish. This is the key to fulfillment for an individual—and perhaps to the flowering of all peoples.

In the end, of course, there is no simple summing up. The president of Harvard cannot be tagged in a few words. And that day has long since gone when anyone could blueprint Harvard or define its purposes simply. Pusey is the one person who penetrates to every part of it. He channels the flow of money; he makes the key decisions on people; he passes on education policy, and he informs the governing boards. Above all, he provides the balance among complex purposes and forces working on the university, holding it together, keeping it moving ahead on many fronts.

It may be that, in time, Nathan Marsh Pusey will become something of a legend. Harvard does have a way of making legends of its giants. It may also be that the day of legends and of giants is gone. But certainly as of today, Pusey is not thinking of that. Rather, whenever his mind turns from the presidency of Harvard, he thinks of Mt. Desert Island. "I go there and get out my crowbar."

19

HARVARD AND MEGALOPOLIS

"SO great are the consequences of the general evolution heralded by the present rise and complexity of Megalopolis that an analysis of this region's problems often gives one the feeling of looking at the dawn of a new stage in human civilization. . . . Indeed, the area may be considered the cradle of a new order in the organization of inhabited space."

These words are from the introduction to *Megalopolis,* a study of the northeastern seaboard of the United States by Jean Gottman, a French geographer whose insights into American society may have as lasting an impression as did those of another Frenchman, Alexis de Tocqueville.

Gottman, in looking at the great clustering of central cities, suburbs, and related rural areas that stretches from north of Boston to south of Washington, found much ground for optimism. "Crowded within its limits is, on the average, the richest, best educated, best housed, and best serviced group of similar size . . . in the world.

"No other section of the United States has such a large concentration of population, with such high average density, spread over such a large area. And no other section has a comparable role within the nation or a comparable importance in the world. Here has been developed a kind of supremacy, in politics, in economics, and possibly even in cultural activities, seldom before attained by an area of this size."

Gottman goes on to one of his major conclusions:

"Megalopolis stands indeed at the threshold of a new way of life, and upon solution of its problems will rest civilization's ability to survive."

Gottman's study of the area, published by the Twentieth Century Fund, is perhaps the most intensive and, at the same time, most imaginative ever done of an area.

At one point he stresses the early development of universities as one of the keys in the growth of Megalopolis—three hundred years ago a mere outpost of European colonization and now foremost in the world. He points out that no one can overlook the influence of Harvard, Yale, and Princeton among the older universities, John Hopkins and M.I.T. among the younger.

What that influence was we can never measure precisely. In the early days it was, of course, largely the work of alumni with classical educations, the men who shaped the Republic, opened up the China trade, planned the railroads. De Tocqueville in the 1830's commented on the education: "The study of Greek and Latin literature is peculiarly useful in democratic communities."

Today the universities' role is much more direct, although just as immeasurable. Megalopolis functions only because of the services of millions of highly trained people, intensely specialized, with a great diversity of skills and competence, with the vision to make decisions in a fast-changing world. They function in schoolhouse and skyscraper. Their training, basically, is shaped by the educational institutions. One rather spectacular example: the dozens of research and electronic companies that have grown up along Route 128 outside of Boston. While not directly tied to the universities, they are nevertheless closely linked to Harvard and M.I.T. With the growth of research—and Gottman points out that Megalopolis is plentifully supplied with laboratories of all kinds—the universities have a direct impact on many, many areas of life.

What of the future?

Megalopolis is almost amorphous—an urban and suburban frontier. And it is constantly changing. Gottman makes few predictions.

Harvard, too, is a process of change. But it is relatively small, the ideas by which it lives are visible—and academicians occasionally are so bold as to forecast.

Some forces working on Harvard are so strong that they are obviously going to continue to shape it in years to come. The United States is going through a rapid evolution in its schools, one that had been developing for years but got fresh impetus when the Russians sent Sputnik soaring around the world. The teaching machine and programed instruction (developed by B. F. Skinner of Harvard), new knowledge of perception and learning, perhaps even television teaching, will continue to raise the level of secondary school graduates. This may reshape Harvard's General Education program, may put more and more incoming students directly into sophomore work, may, in the end mean that the high schools will take over much of the work now done in the freshman year.

With women on the march, and with more and more women working in a labor force that demands higher and higher education, Radcliffe almost inevitably will become integrated in theory and in fact.

With the drive of students, and the explosion of knowledge, Harvard—as a university—will almost certainly become more oriented toward higher education, more specialization.

And with the world rapidly becoming smaller, Nigeria now a neighbor of Nantucket, and the United States headed for some form of community with the European nations, Harvard will become more international. A Center for Latin-American Affairs, another for Africa . . . more exchange students . . . more training of Peace Corps people or their successors.

In all these things Americans are a society on the march. The drives are so strong that, for the educational institutions that take the impact, the problem may be to keep the march from becoming a rout.

As to what all this will mean for the universities, some of the most perceptive thinking has been done by McGeorge Bundy, dean of Harvard's Faculty of Arts and Sciences until called to Washington by President Kennedy.

In a paper prepared for the Second Corning Conference at Corning, New York, in May, 1961, Bundy pointed to four areas in which he expected to see major changes by 1975. At least four of "the distinctions which were central to the structure of the American college in 1960" would cease to have any real importance by 1975, as Bundy saw it.

The first and in many ways greatest change will be "to rub out most of the distinctions separating the student, the teacher, and the research scholar which have bedeviled our thinking about higher education in the first hundred years of the American university." Bundy went on: "by 1960 these opposed categories—and perhaps particularly the categories of 'teaching' and 'research'—had begun to make a fractionated shambles of the American university. In spite of all that older and wiser men could say and do, fashion seemed to favor research as against what was called teaching." Looking ahead, putting himself in the position of one speaking in 1975, Bundy said, "The man whose heart really does belong almost wholly to research no longer feels a moral pressure to give a reluctant fraction of his time to forms of teaching which he does badly. In the university community . . . all kinds of work are equally honored; all are understood to be a part of the whole, and all are interconnected in so many ways that efforts to protect a misconstrued 'balance' are no longer necessary."

In the same way, in universities where it is understood that learning as a whole is what counts and that there can be no sharp line between the learning of a freshman and the learning of a scholar isolated in a laboratory, Bundy sees the distinction between undergraduates, graduate students, and faculty fading away. Instead, all will be members of a learning community.

Second, Bundy sees the department—Chemistry, Economics, Psychology, and so on—fading from the decisive unit of organization in 1960 to one of comparative insignificance in 1975. The departments are powers today: they control budgets, promotions, new appointments, and, perhaps most significant of all, the granting of degrees. But Bundy believes that the true courses of learning, the results of scientific investigation and scholarship, will simply smash the old distinctions. When historians have to be psychologists, when chemists have to be physicists, when scientists generally search out the unity of the cosmos, how can departments based on old and sterile classifications of knowledge survive? They will go on, as Bundy sees it, because they are useful instruments of administrative tidiness, but they will no longer have power to strike terror into students or assistant professors.

Third, Bundy sees the old distinction between administrators and professors disappearing. Admission staffs will take on assignments as professors; professors will find that they enjoy doing administrative chores, for "administration too is part of learning, unless it be badly done or unnecessary."

"The greatest change of all," though, will be the gradual weakening of "the line between membership and nonmembership in the university community itself." Today a man is a teacher, a student—or nothing. This is perhaps the "most wasteful of all the patterns of action of our universities, and the one which most obviously did violence . . . to the notion of learning as a proper, continuing, and central activity of man. Why should his graduation . . . cut off a promising chemist from any connection with our laboratory? Why should a man's graduation from law school and entry upon his profession make him no longer a member of a law school?"

In short, as Bundy sees it, a university should be "not merely a place of full-time effort by young students and old professors—it is also a home, for hours, or days, or weeks at a time, of all highly civilized men."

Bundy, who knows the realities of budgets in a university that is rich by the standards of others, suspects that it will be the public institutions who first reach this state of freedom. They will get the money to support it from government appropriations.

This may seem like a noble dream. But men live by such dreams, and this is an old one. The Greeks who invented the word "megalopolis" as the name of a great city they were to build, the Founding Fathers of the United States, and civilized men generally have shared this dream. They have all sought a state which provides the greatest freedom for men and provides the greatest scope for their talents.

It may be that one university will reach the point Bundy suggests by 1975. It may come earlier or it may come later. And it is likely that not one but perhaps a dozen of the great American universities will provide similar degrees of opportunity and of freedom.

The forces working toward Bundy's ideal are clear in the research centers growing at the universities, the growing trend toward independent learning, the growing movement to find ways of making meaningful the old statement that education should be a lifelong process. Night school, adult education, refresher course—these are firmly established now as a major part of American life.

With the universities pioneering and the forces of history seeming to work in the same direction, many other institutions may go along. Megalopolis and the country as a whole may make it easier for men to move from company to company, from community to community, from industry to government, to take sabbaticals, to go back to school to study their own specialties.

This would, indeed, be a new dimension of the long reach of a university.

But it is likely to come.

And Harvard, if the force of its own history means anything, will be one of the leaders in the movement toward broader liberty.

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The author: Peter French grew up in the vicinity of Boston and was educated as a journalist at Boston University. He joined the McGraw-Hill organization in 1946 and is now Managing News Editor of *Business Week*. In March, 1961, his cover article for that magazine, "What It [illegible] Makes Harvard Important Now," attracted wide attention and became the springboard for this book.

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